# Cultural Geography of Bundelkhand Region (U. P.)

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IN
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By
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1986

## CERTIFICATE OF SUPERVISOR

Certified that Sri Jitan Prasad Vishwakarma has worked for the required period under my supervision for the degree of Doctor of Philosophy in Geography on the topic, "Cultural Geography of Bundelkhand Region (U.P.)," The accompanying thesis submitted by him embodies the work of the candidate himself and it is an original work.

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CONTENTS


CERTIFICATE

ACKNOWLEDGEMENTS

LIST OF TABLES I-III

LIST OF MAPS I-III

ABBREVIATIONS I

INTRODUCTION 1-15

Meaning and Purpose of Cultural Geography; Statement of the Problem; Objectives; Methodology and Techniques Organisation of the work; References.

CHAPTER I 16-42

THE REGION: ITS PHYSICAL ENVIRONMENT

Location and Extent; Geologic Structure; Relief Features; Drainage Pattern; Climate; Natural Vegetation; Soils; References.

CHAPTER II 43-74

SEQUENT OCCUPANCE AND CULTURAL DEVELOPMENT

Pre-historic Period; Ancient Period; Medieval period; Modern Period: British Period, Post-British Period; References.

CHAPTER III 75-128

SETTLEMENT PATTERN

Rural Settlements : Origin and Evolution; Pre-historic and Ancient Periods, Medieval Period; Modern Period; Population Size Distribution; Spatial Analysis; Types

of Settlements; Place Names Associated with Rural Settlements; Urban Settlements: Origin and Evolution; Temporal Variation in Number of Towns; Chronological class variation; Size Class Distribution; Degree of Urbanization; References.

CHAPTER IV 129-172

POPULATION PROFILE

Trends of Population Change; Spatial Distribution of Population; Density of Population: Arithmetic Density, Physiological density, Agricultural Density, Nutritional Density; Population Structure: Rural-Urban Composition, Sex-Ratio, Occupational Structure, Age-Structure, Religious Structure; Literacy; Population Projection; References.

CHAPTER V 173-210

DYNAMICS OF LAND-USE AND CROPPING PATTERN

Evolution of Land-use; General Land-use; Changes in Land-use; Irrigation; Cropping-Pattern; Crop concentration, Crop Diversification, Crop Combination Regions; References.

CHAPTER VI 211-229

CROP PRODUCTIVITY AND POPULATION BALANCE

Measurement of crop Productivity: A Review; Levels of Crop Productivity: Areas of High Productivity, Areas of Medium Productivity, Areas of Low Productivity; Foodgrains Vis-a-vis Population: Availability of Calories from Foodgrains and Standard Natrition Unit; References.

CHAPTER VII 230-279

SOCIAL STRUCTURE AND SOCIAL CHANGE

Concept of Social Structure; Concept of Social changes; Patterns of Social Change; Contemporary Factors of Social Change; Traditional Social Values; Conventional Social Set-up : Caste System, Jajmani System and Its Functional Patterns, Intra-caste Relations, Inter-caste Relations; Family Structure and Organisation; Occupational structure of Castes; Inter-Village Organisation; Fundamental Characteristics of Villages and Process of Changes in Socio-economic Structure; Major Forms of Changes in Traditional Social System; References.

CHAPTER VIII 280-332

TECHNOLOGICAL DEVELOPMENT AND CULTURAL CHANGE

Concept of Culture; Pattern of Cultural Changes; Technological Development: Agricultural Mechanisation, Management of Water Resources, Electrification, Industrialization: Historical Development, Distribution of Industries, Transport and Communication: Evolution of Transport, Existing Pattern of Transport, Accessibility, Post and Telegraph; Other cultural Features; References.

CHAPTER IX 333-353

CONCLUSIONS AND CULTURAL REGIONS

A - Conclusions

B - Cultural Regions.

BIBLIOGRAPHY 354-368

APPENDICES 369-382

..

## LIST OF TABLES


1.1 Forest cover in the Region (1983).

1.2 Types of forests and Their Distribution (1983).

1.3 Percentage of minor soils.

1.4 Progress of soil conservation in the region.

3.1 Percentage of villages in the class to total inhabited villages.

3.2 Spacing and Nature of Dispersion of Rural Settlements.

3.3 No. of occurrences of some Prefixes and Suffixes in place names of Rural settlements.

3.4 Temporal variation in Number of Towns.

3.5 Number of Towns in Different Size Classes (1901-81).

3.6 Temporal variation in Size-Class of existing Towns (1901-81).

3.7 Degree of urbanisation.

3.8 The measurement of Urbanisation in the Region (1981).

4.1 Trend of Population Change in the Region (1901-81).

4.2 Different Types of Densities in the Region (1981).

4.3 Rural-Urban composition of Population in the Region (1981).

4.4 Sex-ratio in the Region (1981).

4.5 Main workers in the Region (1981).

4.6 Occupational Structure of Population in the Region (1981 .

4.7 Age-Structure of Population in the Region (1971).

4.8 Religious-Structure of Population in the Region (1971).

4.9 Literacy of Population in the Region (1981).

4.10 Projection of Population in the Region.

5.1 Land Utilization in the Region (1982-83).

5.2 Changes in Land-use in percentage (1950-83).

5.3 The Percentage of Net Irrigated Area to the Net Sown Area (1982-83).

5.4 The Proportion of Irrigated Land by Various Sources (1982-83).

5.5 Area under Principal Crops in percentage (1982-83).

5.6 Crop concentration Indices (1982-83).

5.7 Crop Diversification Indices (1982-83).

5.8 Crop Combination Regions (1983).

6.1 Crop Productivity Indices (1983).

6.2 Availability of Calories Per head per day on the Basis of S.N.U. (1983).

7.1 Distribution of Castes (1931).

7.2 Caste-wise Socio-Economic Structure of Families in Percentage.

7.3 Caste-wise Income Levels of families in percentage.

7.4 Caste-wise occupational Structure of Families in Percentage.

7.5 Caste-wise family Structure in percentage.

8.1 Distribution of Agricultural Implements in Sampled villages.

8.2 Distribution of Agricultural Implements in the Region (1960-83).

8.3 Electrification of villages in the Region (1983).

8.4 Industrial units in the Region (1983).

8.5 Length of Metalled Roads in the Region (1983).

8.6 Length of Railways in the Region (1983).

8.7 Degree of Accessibility by Roads in the Region (1983).

9.1 Composite indices of Cultural Development.

9.2 Levels of Cultural Development.

..

## LIST OF MAPS


| | |
|---|---|
| 0.1 | Functional Concepts and Interrelationships in Cultural Geography. |
| 1.1A | Bundelkhand (U.P.): Politico-Administrative setup. |
| 1.1B | Location Map. |
| 1.2A | Relief |
| 1.2B | Geology |
| 1.3 | Drainage |
| 1.4A | Normal Annual Rainfall |
| 1.4B | Mean wind speed |
| 1.4C | Relative Humidity |
| 1.5 | Forest Cover (1983). |
| 1.6A | Soils |
| 1.6N | Area under Erosion |
| 1.6C | Achievement of conservation work. |
| 3.1A | Density of villages |
| 3.1B | Size of villages (Based on Area (1971). |
| 3.1C | Spacing of villages. |
| 3.1D | Size of villages (Based on Population) (1971). |
| 3.2 | Nature of Dispersion of Rural Settlements. |
| 3.3A | Degree of urbanisation |
| 3.3B | Stages of urbanisation (After Northam). |
| 3.3C | Stages of urbanisation in Bundelkhand (U.P.) |
| 4.1 | Trend of population change. |
| 4.2 | Spatial Distribution of Population |
| 4.3 | Density Patterns |

| | |
|---|---|
| 4.3A | Arithmetic Density |
| 4.3B | Agricultural Density |
| 4.3C | Physiological Density |
| 4.3D | Nutritional Density |
| 4.4 | Rural-Urban composition (1981). |
| 4.5 | Working force (1981). |
| 4.6 | Occupational Structure |
| 4.6A | Cultivators |
| 4.6B | Agricultural Labourers |
| 4.6C | Industrial Workers |
| 4.6D | Other workers |
| 4.7A | Total Literate Population |
| 4.7B | Male and female Literacy. |
| 5.1 | Land-use (1982-83). |
| 5.2A | Irrigated Area by various sources. |
| 5.2B | Percentage of Net sown Area Irrigated. |
| 5.3 | Cropping pattern (1982-83). |
| 5.4 | Crop concentration Index |
| 5.4A | Wheat |
| 5.4B | Paddy |
| 5.4C | Barley |
| 5.4D | Bajra |
| 5.5 | Crop concentration Index |
| 5.5A | Arhar |
| 5.5B | Jwar |
| 5.5C | Gram |
| 5.5D | Pulses |

| | |
|---|---|
| 5.6 | Crop Diversification |
| 5.7 | Crop combination Regions |
| 6.1A | Levels of crop productivity |
| 6.1B | Availability of Calories (Per capita daily) |
| 7.1 | Distribution of selected castes (1931). |
| 7.2 | Caste Ranking (As percent of total population). |
| 7.2A | First Rank |
| 7.2B | Second Rank |
| 7.2C | Third Rank |
| 7.2D | Fourth Rank |
| 7.3 | Location of Sample villages. |
| 8.1A | Utilization of Water Resource |
| 8.1B | Length of Canals. |
| 8.2A | Transmission Lines & Sub-Stations |
| 8.2B | Electrification of villages |
| 8.3 | Industrial structure |
| 8.4 | Transport System |
| 8.5 | Physical Accessibility (by Roads) |
| 8.6 | Physical Accessibility (by Railways) |
| 9.1A | Cultural Regions |
| 9.1B | Delimiting the Levels of Cultural Development |


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## ABBREVIATIONS

| | | |
|---|---|---|
| A.A.A.G. | : | Annals of the Association of American Geographers, New York. |
| G.R.I. | : | Geographical Review of India, Calcutta. |
| N.G.J.I. | : | National Geographical Journal of India, Varanasi. |
| U.B.B.P. | : | Uttar Bharat Bhoogol Patrika, Gorakhpur. |

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## INTRODUCTION

The human culture and its elements have been fascinating objects in geographical studies. At the outset, it seems, therefore, pertinent to outline the concept of culture. Culture represents a way of life of a people. It is an environment which has been created by a human group occupying a common territory in the form of language, idea, institutions, tools, occupations and technology. Culture is not a static one. Dynamism is in its nature. The form of culture is affected by biotic and environmental needs of man and society. The changes in these needs result in corresponding changes in organisational frame of culture. All that we see on the earth surface is the result of cultural changes. Cultural change is the consequent of interaction between man and physical environment. At the beginning, the studies, dealing with man-environment interplay, laid much stress on physical forces in determining the human activities on the surface of the earth but the man of modern developed society is getting control over the physical forces in a number of ways and now it is witnessed that human activities are not only governed by physical forces but also equally by social and cultural forces. Cultural traits are, thus, inherent in every geographical problem whether physical or human. The material and non-material, both the

elements of socio-cultural environment influence the human activities. To study the influence of these elements on the development of a landscape, a seperate branch of human geography has been developed, which we label cultural geography.

Meaning and purpose of Cultural Geography :

Man is an active geographical agent on the surface of the earth. He adopts physical environment, modifies it and makes adjustment with it according to his needs, thus, creating a cultural landscape. Each human population that can be termed as culture group, develops its own cultural landscape. Since creative imagination, will power, inventions and values of life differ from group to group, a variety of cultural landscapes is found to be noticed on the surface of the earth. The impact of human activities on the developmental processes of the landscape falls within the purview of cultural geography. Thus cultural geography can be defined as the study of contributions made by human groups by their ideas and behaves to the evolution of various geographical landscapes. "Cultural geography" according to spencer and Thomas, Jr., "is concerned with the systems of human technologies and cultural practices as they are developed in particular regions of the earth through time by human populations concerned as culture groups[1]. "Thus man and his works

are in the core of cultural geography. To be more explicit, the subject matter of cultural geography can be distinguished in five implicit themes : culture, culture area, cultural landscape, cultural history and cultural ecology[2].

The notion of culture does not imply an isolated man or personal characteristics but implies human group within which features of belief and behaviour are common. It is the culture which provides much knowledge to understand similarities and dissimilarities among the human groups[3]. Social equality and policies of the government in the context of language, personal behaviour, mode of living, technology laces the people in cultural unity[4]. The aim of cultural geographer is not explaining the inner working of a culture or describing fully the patterns of human behaviour, but evaluate to those technical potentials of human communities by which they use and modify their habitat. Thus one of the objects of cultural geography is to study the distribution of culture and its elements in time and space[5].

The investigation of the past and present distribution of culture traits which constitute the basis for recognition and delimitation of culture areas, is the first step to appraise the cultural elements. The area occupied by human groups that have characteristics of specific cultures in a particular time, is known as culture area. It is clear

from the dependence of cultural homogeniety on existing communicationand dependence of communication, in turn, on geographic contiguity that culture area has relative uniformity not absolute one[6]. Each culture area is divided in to several sub-culture areas which have the same culture traits spatially. In fact, it is totally impossible to say which traits, elements or complexes of them will provide tangible evidence of culture areas or grouping. In practice, attention is very oftenly paid to the elements of broad importance such as pattern of livelihood, settlement pattern, language and religion. It is sure that some variations are found in cultural homogeniety of sub-divisions which are implied in a large area, but the internal uniformity and distinctiveness of cultural elements in a large area are clearly noticeable. Thus, cultural geography, in a broad sense, makes comparision between changeable distribution of culture area and the distribution of other features of the earth surface so that the characteristics of the features related to the environment of particular culture area may be appreciated and the role of human process which has been paid in the constituting as well as giving permanancy to

these geographical features may be explained[7].

In cultural geography the concept of cultural landscape has much importance. It is the tangible specific outcome of inter-relationship between natural invironment and human groups. The human groups of different cultures have exploited the treasure of physical environment to their best level and, thus, have created their own landscapes. Geographically cultural landscape is a region within which internal homogeniety and interaction among all the elements are found. The study of cultural landscapes provides not only the systematic distribution of the area concerned but also the base for regional classification, contribution of man in geographical transformation and the knowledge about the striking aspects of cultural communities[8]. The cultural geography studies the phenomenon created by the complicated interplay between a particular culture group and a particular set of natural elements. For this purpose a cultural geographer has to peep into history because a phenomenon is not the product of one day happening. It is the successive product of a long chain of man-environment interaction[9]. Wilson has expressed that in the successive development of cultural geography and cultural landscape, Sauer has given importance to culture as a factor acting on the stage of natural landscape through time. The result of which is appeared in different forms of cultural

landscapes[10]. Each cultural landscape has its own history, the stages of which interprets the cultural landscapes of past and present. Besides, the present landscapes reflect not only the operation of local processes but also a multitude of outer influences carried by migration, diffusion, commerce and exchange[11]. A researcher can investigate the sequent land occupance by different groups in a particular area by evidences of archaeological facts, place names, traditions, language, etc. and adds these groups to those of other areas which have similar culture characteristics. Thus, the study of cultural history is very much necessary for understanding the successive land occupance and cultural development.

Now cultural geography is began to be defined as the study of ecology. The science of ecology is the study of interaction between natural environment and living organism in a given area. In this theme, cultural geographers include the studies of spatio-temporal relationships between human societies and environment and the resultant development. The study of cultural ecology helps in understanding the processes of adjustment and modification which results in the changes in social institutions, human behaviours and environment[12]. Steward is of the opinion that cultural ecology is the study of those processes by which a human society adjusts with its environment[13]. From ecological

point of view, Steward asserts, man is dominant overall due to his cultural ability. But this statement about man-environment relationship can not be universally true.

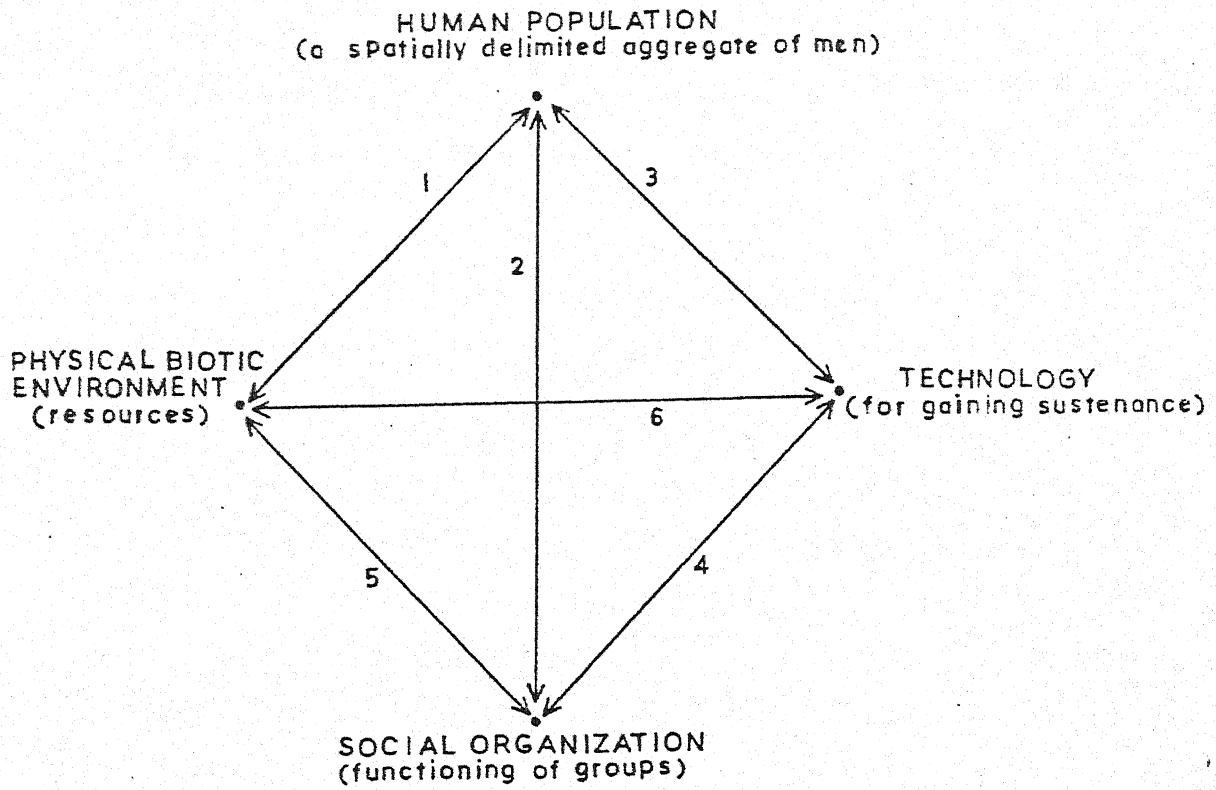
A brief discussion of above themes reveals that the scope of cultural geography is complex and wide. Spencer and Thomas have tried to illustrate the subject matter of cultural geography. They have suggested to deal with four concepts that are points of reference but functionally interdependent and six relationships among them within the study of cultural geography. (Fig. 0.1).

The four concepts are human population, physio-biotic environment, social organisation and technology and six inter-relationships are population↔environment, population↔social organisation, population↔technology, social organisation↔technology, environment↔social organisation and environment↔technology.

Statement of the Problem :

Bundelkhand, the study region, is a separate administrative division of Uttar Pradesh. It is commonly held that the region was named after the Bundela Kings who were dominating here in medieval period of history. The region has distinctive culture of its own. It has been inhabited by primitive tribes in prehistoric times and has been somewhat unaffected by Aryan culture and therefore

# FUNCTIONAL CONCEPTS AND INTER-RELATIONSHIPS IN CULTURAL GEOGRAPHY




AFTER: J. E. SPENCER AND WILLIAM L. THOMAS, Jr.

FIG. 0-1

remained isolated for long due to the Yamuna river in the north and the Vindhyan hills in the south. In ancient and medieval periods of history, the region has been an arena of political struggles. The political boundaries and cultural set-up of the region undergone changes from time to time and even from dynasty to dynasty. Invasions after invasions coupled with unfavourable physical conditions have badly shattered the socio-cultural life of the people. Thus, the region has been crucible of diverse cultures since prehistoric times. The existing cultural pattern is, therefore, very much complex, epitomizing the blending of cultural traits of various people of diverse origins. Economically the region is regarded as one of the most backward regions of the State due to traditional agriculture and low level of industrialization and urbanization. Hard nature of physical conditions in the south and comparatively soft nature in the north have given birth to marked cultural diversity in the region. However, when we name Bundelkhand in India, a sense of backwardness generally passes through the mind. The question arises why it is so ? Why it is backward in comparision to adjacent regions of the State ? Does region lack resources endowments or developed technology ? These and some others the question marks which invite the attention of geographers to be investigated. Since the socio-economic development of a region is greatly influenced by culture, cultural

geographer can play a good role in answering the questions. With this view in mind, the Bundelkhand region (U.P.) has been taken for present research monograph.

Objectives of the Study :

As already noted, the present work is devoted to the study of cultural features which should be taken under consideration while formulating the development plans. Since no regional planning can be successful without prior knowledge of the characteristics of culture of the area concerned, the study aims at to present salient cultural features in such a manner as may be of great help in formulating the development policies of the study region. The broad objectives of the study are :

(i) To investigate the sequence of land occupance and cultural development from prehistoric to the present times,

(ii) To exhibit the influence of physio-cultural environment and spatial distribution of settlements rural and urban both,

(iii) To reveal the quantity and quality of population,

(iv) To present the dynamics of general land-use and cropping pattern,

(v) To assess the agricultural productivity in terms of agriculture produce-population balance.

(vi) To appraise the social structure and the factors of social change operating through time,

(vii) To investigate the impact of developed technology on cultural changes and lastly,

(viii) To divide the study region into sub-regions on the basis of homogeneous cultural development.

Methodology and Techniques :

Research methods of this work are empirical as well as statistical which are based on library work, field work and laboratory work.

The author has consulted university libraries for getting conceptual knowledge of cultural geography. The study of reference books, journals and theses helped greatly in the application of concepts and models which formed the base of the organisation of the work. Secondary data regarding physical and cultural background of the region were obtained from the published sources. The District Gazetteers, General Population Tables, Census Handbooks, Census Reports and District Statistical Bulletins provided the necessary data.

Field work is an essential part of geographic research. A number of first hand informations have been generated by field work. As such, field trips were organised to get the information regarding origin and evolution of settlements, place names associated with settlements, social structure and social change. On the spot enquiry was made to get the current picture of social structure and the factors which are operating in bringing the change in the society, were investigated. For this purpose, twenty villages (Fig. 7.3; Appendix I) were sampled on the basis of stratified random sampling method and every house-hold of the villages was interviewed with the help of a long questionnaire (Appendix II). Interviews and discussions were also made with the influential and old persons.

Laboratory work is essential for data analysis and the preparation of maps. Data have been processed through statistical methods. Many formulae regarding nearest neighbour analysis, urbanisation model, population density, population projection, crop concentration and diversification, crop combination regions, measurement of agricultural productivity and productivity-population balance have been applied. Various maps have been prepared to reveal the main cultural characteristics of the region.

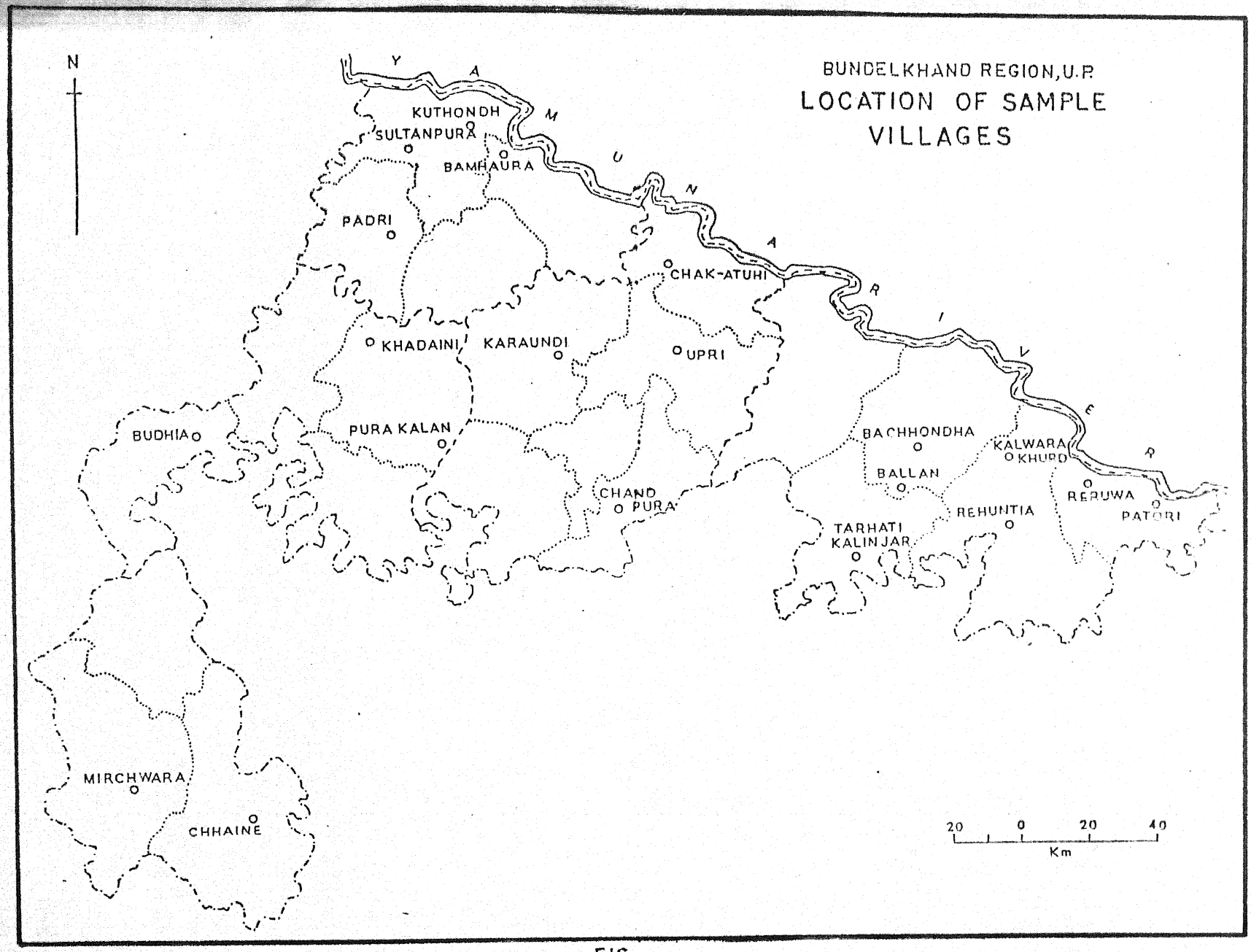

BUNDELKHAND REGION, U.P.
LOCATION OF SAMPLE VILLAGES
N
YAMUNA RIVER
KUTHONDH
SULTANPURA
BAMHAURA
PADRI
CHAK-ATUHI
KHADAINI
KARAUNDI
UPRI
BUDHIA
PURA KALAN
CHAND PURA
BACHHONDHA
KALWARA KHURD
BALLAN
REHUNTIA
RERUWA
PATORI
TARHATI KALINJAR
MIRCHWARA
CHHAINE
20 0 20 40
Km

FIG. 7.3

It may be mentioned that this work is bound to suffer from a great handicap i.e. the paucity of the desired informations. After 1931 the Census of India stopped the publication of data pertaining to castes, therefore, the analysis of caste distribution is based on the census 1931. Likewise, the analysis of religious structure, age structure have been made on the basis of the census 1971. Besides, in some cases the author could not obtain the facts and figures in the desired way, therefore, he had to adjust the information in whatever form it was available.

Organisation of the Work :

The work has been divided into nine chapters which begin with theoretical background.

Chapter I portrays the physical environment of the study region. Geologic-structure, relief features, drainage, climate, natural vegetation and soils have been elaborated with simple proposition that physical environment plays an important role in the process of cultural development.

Chapter II is devoted to the sequent occupance and associated cultural development beginning from the pre-historic times to the present. Cause and effect analysis of cultural development has been elaborated in space and time.

Chapter III presents the discussion of settlements both

rural and urban. Origin and evolution of settlements and place names associated with settlements have been analysed. Besides, important aspects of both types of settlements rural and urban have been studied.

Chapter IV deals with Population profile with special reference to its growth trend, distributional pattern, density patterns, occupational structure, age-structure, literacy and some other important demographic features.

Chapter V deals with dynamics of land-use and cropping pattern. The details study of agricultural phenomena as presented in this chapter reveals how human population of this region has been successful in cultivating and managing agricultural land for his subsistence.

Chapter VI is concerned with the most important aspect of cultural geography that is agriculture and population balance. In this chapter the productivity of agricultural land has been analysed and it has been correlated with the food requirement of population. The discussion, thus, presents the level of population nourishment.

Chapter VII is related with the social structure and social change. The concept of social structure and change, patterns of social change, conventional social values and set-up have been illustrated and the factors of social changes

have been highlighted.

Chapter VII traces the development of technology in the region and the consequent cultural development. The mechanization of agriculture, management of water-resource, electrification, industrialization and transport and communication have been dealt with.

Chapter IX concludes the results of the study. Besides conclusions, the whole region has been divided into sub-cultural regions which will be of much help to the administrators and planners in minimizing the disparities of cultural development in the region.

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# CHAPTER I

## THE REGION, ITS PHYSICAL ENVIRONMENT

Spatial patterns on the surface of the earth are the result of a complicated interplay between physical and cultural factors which collectively fall under the purview of 'Environment'. Although the physical conditions of a region do not entirely provide satisfactory explanation for the conditions of a man, the concept that physical Geography is essential to cultural Geography holds good. No body can interpret the cultural Geography of a region without knowing the physical conditions prevailing there. It would be, therefore, worthwhile to knowledge a brief account of physical environment of the study region.

### Location and Extent :

Bundelkhand Region of U.P. ($24^{\circ}11'$ to $26^{\circ}27'$ N.Lat. and $78^{\circ}$ 10' to $81^{\circ}34'$ E.Long) lies in central part of India (Fig. 1.1B). The region, comprising of five districts and 22 tahsils, is a separate administrative division of the State (Fig. 1.1A). Geographically, the region lies between the Gangetic plain in north and the Vindhyan upland in south, while the eastern boundary is determined by Allahabad district. The region covers an area of 29638 $Km^2$ inhabited by 5438187 persons (Census 1981).

### Geologic Structure :

Due to its location at the northern edge of old peninsular

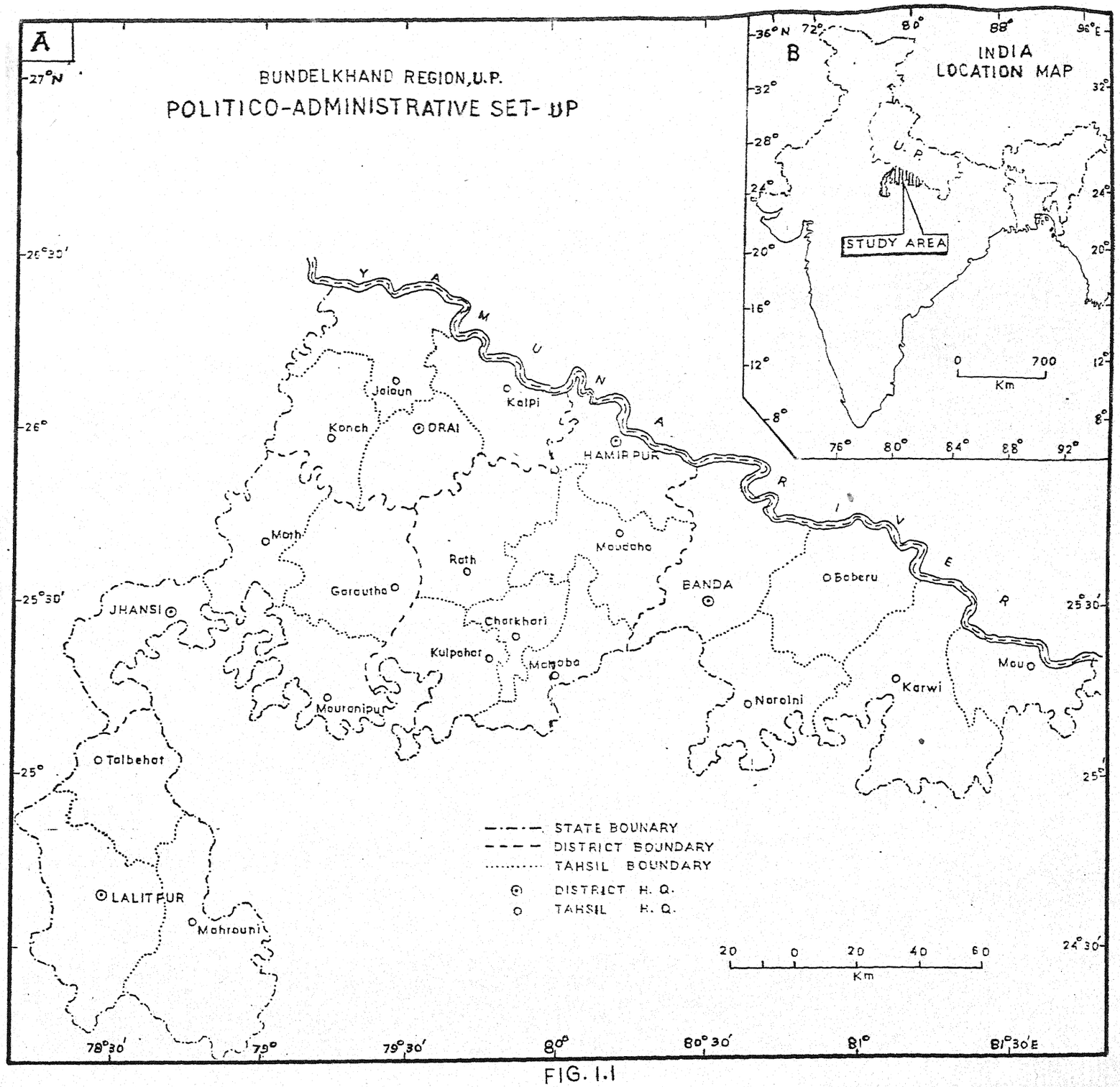
A
BUNDELKHAND REGION, U.P.
POLITICO-ADMINISTRATIVE SET-UP
B
INDIA
LOCATION MAP
STUDY AREA
U P
0 700
Km
YAMUNA
RIVER
Jalaun
Kalpi
Konch
ORAI
HAMIRPUR
Moth
Rath
Maudaha
Garautha
JHANSI
Charkhari
Kulpahar
Mahoba
BANDA
Baberu
Mauranipur
Naraini
Karwi
Mau
Talbehat
LALITPUR
Mahrauni
STATE BOUNARY
DISTRICT BOUNDARY
TAHSIL BOUNDARY
DISTRICT H. Q.
TAHSIL H. Q.
20 0 20 40 60
Km
27°N
26°30'
26°
25°30'
25°
24°30'
78°30'
79°
79°30'
80°
80°30'
81°
81°30'E

FIG. 1.1

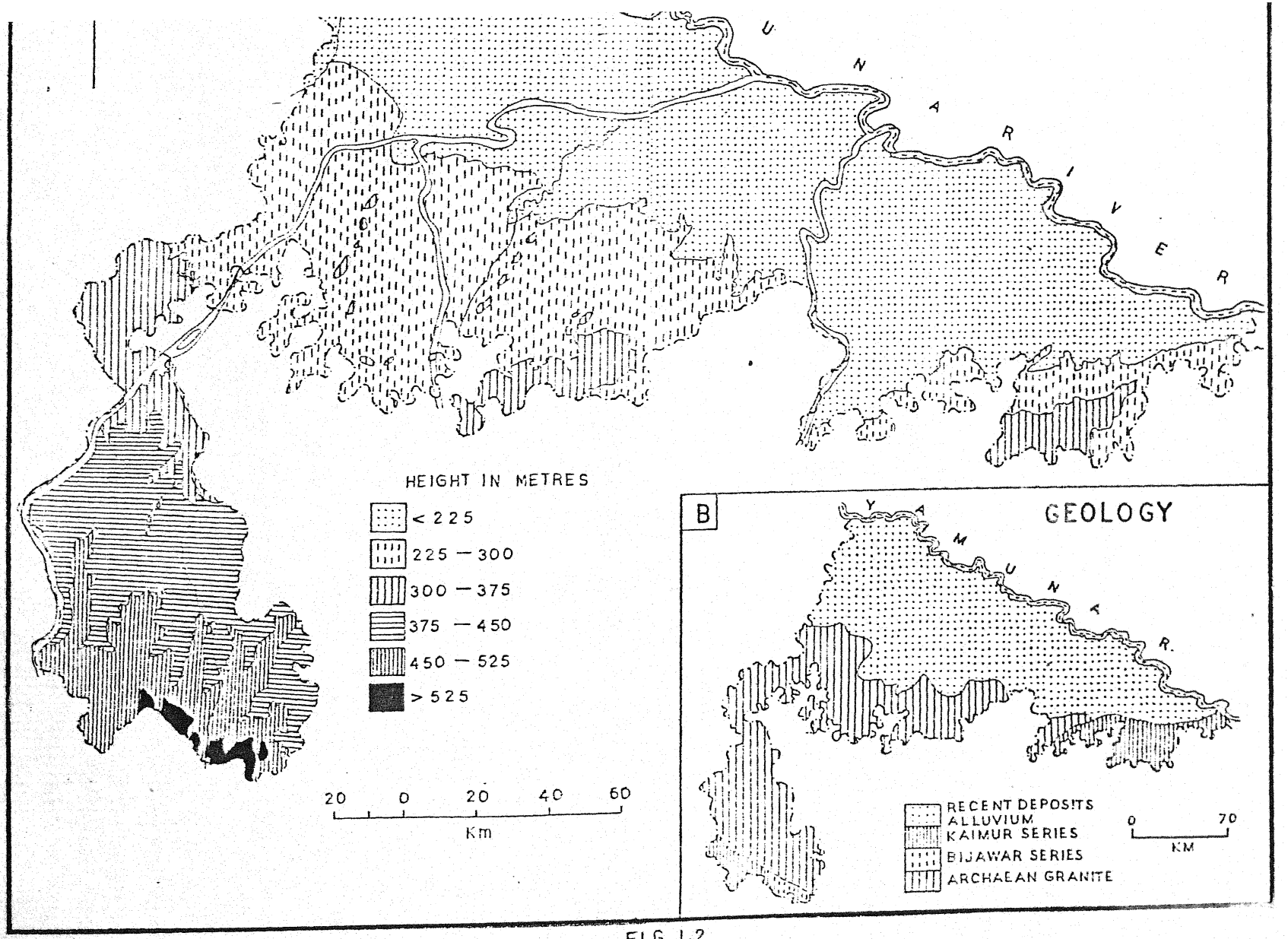
U N A R I V E R
HEIGHT IN METRES
< 225
225 — 300
300 — 375
375 — 450
450 — 525
> 525
20 0 20 40 60
Km
B
GEOLOGY
Y A M U N A R.
RECENT DEPOSITS
ALLUVIUM
KAIMUR SERIES
BIJAWAR SERIES
ARCHAEAN GRANITE
0 70
KM

FIG. 1.2

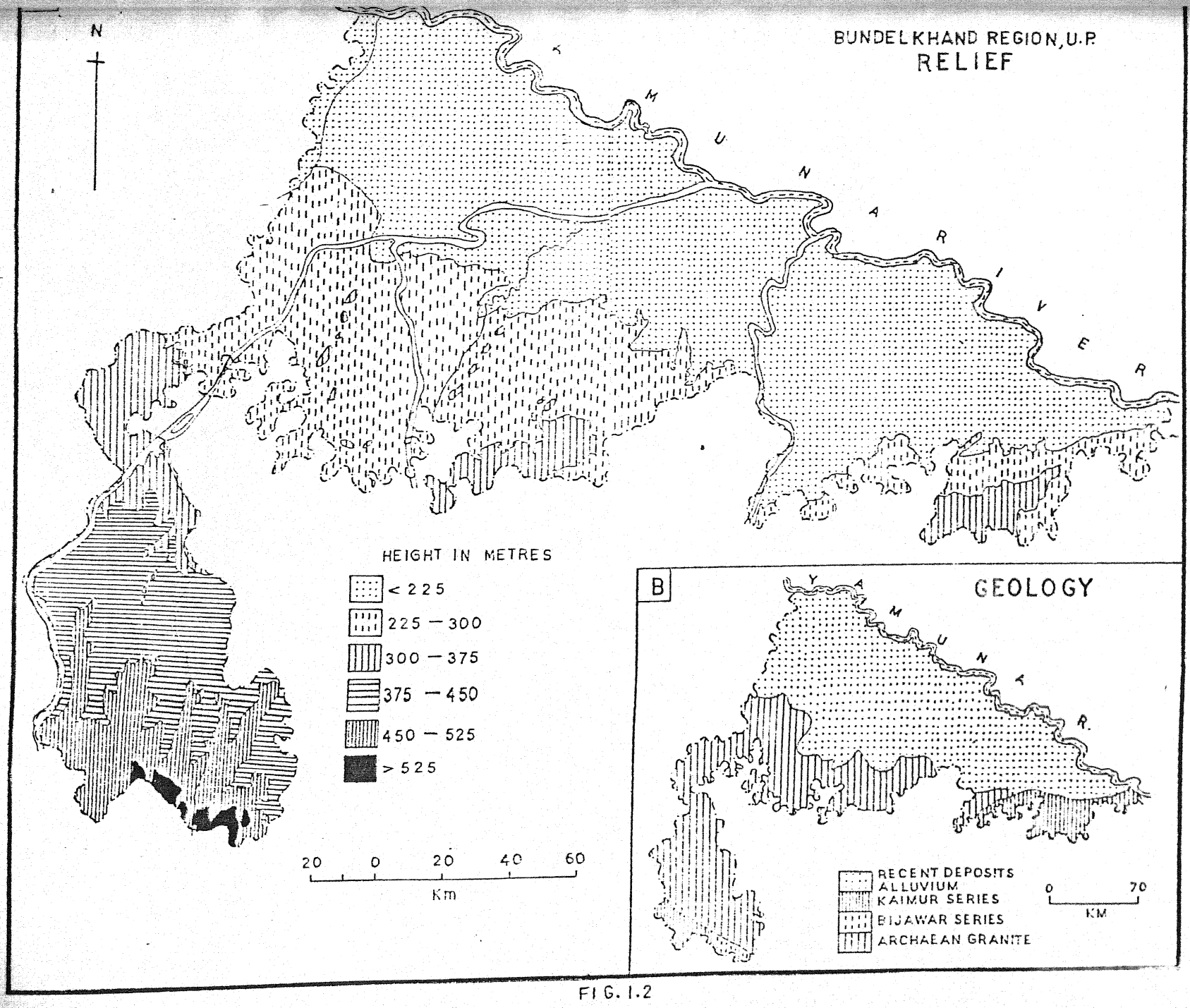
N
BUNDELKHAND REGION, U.P.
RELIEF
YAMUNA RIVER
HEIGHT IN METRES
< 225
225 — 300
300 — 375
375 — 450
450 — 525
> 525
20 0 20 40 60
Km
B
GEOLOGY
YAMUNA R.
RECENT DEPOSITS
ALLUVIUM
KAIMUR SERIES
BIJAWAR SERIES
ARCHAEAN GRANITE
0 70
KM

FIG. 1.2

pattern. The gniesses of Kabrai area (Hamirpur district) are hybrid while in the west, they are bedded due to the effects of some forces from westerly direction. Here these rocks are largely fractured. Towards the Yamuna in the north, the gniesses disappear below the alluvium. Wadia opines that Bundelkhand gniess is traversed by extensive dykes and sills of a coarse grained diorite which persists for a long distance. It is also traversed by a large number of coarse pegmatite veins in a boss of granite[3].

(ii) Transitional System :

Bijawar series, known as transitional system, must have been formed in pre-vindhyan period. This system, succeeding gniesses, occupies a narrow strip of about seventeen miles in south of Madaura and West of the river Dhasan (Lalitpur district). It consists of sandstones, limestones and slates. Here the rocks of transitional system are overlapped by the vindhyans but their outcrops, extending few miles, are found near Sonrai village in Lalitpur district.

(iii) Vindhyan system :

This system is spread around Bundelkhand gniesses and granites in southern and south-western parts of the region. There was an extensive geosyncline, called as 'Vindhyan Sea', in the region where the Vindhyans stand now. The sediments, carried by the rivers from the Aravallis, were deposited in

the geosyncline. The isostatic adjustment in the south and the tectonic movement in the west resulted in the formation of the Vindhyan ranges[4]. The ranges of this system are classified into two broad divisions : The lower vindhyans and the upper vindhyans. The lower vindhyans intervene between the Bijawar series and the upper Vindhyans. The lower vindhyans occur in patches near 'Kurrat' village in Lalitpur district. These are composed of sandstones and sale. The upper vindhyans are characterised by facing escarpments. A few outliers occur at Dongra and Dongra Kalan villages in Lalitpur district. These consist of massive sandstones and conglomerates. The vindhyan sandstones are much economic importance. The great monumental buildings of history are made of these stones.

(iv) Recent Deposits :

Alluvial sediments, recently deposited between the Yamuna and southern highland, cover an extensive area in northern part of the region. The Betwa, Dhasan, Ken, Baghain and their tributaries flowing from south-west to north-east, have carried and deposited a vast amount of sediments in the north. The thickness of the deposits is deeper in the north and shallower in the south. The texture of sediments become more and more refined from south to north.

Relief Features :

Undulating mountaineous surface dissected by torrential

streams in the south and the stretch of homogeneous plain in the north are the chief physiographic characteristics of the region (Fig. 1.2A). The physiographic contrast between the southern and northern parts is so obvious that the region can be easily divided into two parts : upland Bundelkhand and low land Bundelkhand. In the west, the termination of the former into the latter is so gradual that no precise line can be drawn between them, but in the east, the latter starts just after the former ends. However, the Contour line of 225 metres can be taken as a line separating the former from the latter[5].

Upland Bundelkhand :

It appears to be detached in two areas : The one in the south-west and the other in the south-east. In the south-west, south of Jhansi and further southwards, the region becomes more and more undulating broken up by numerous rivers and 'nalas'. In the extreme south-west, the vindhyan mountains form steep escarpments. The line of escarpments, running from Kurrat village in the south-east to Jakhlaun in the south-west (Lalitpur district), is broken up at few places as Dhaurra, Narhat and Madanpur villages. To the south of these escarpments is a plateau intersected by wide valleys. Further south of the plateau is another range of escarpments. Here the Betwa river forms a narrow gorge in the west. This portion of upland,

bounded by the vindhyan escarpments in the south, is a tableland with average elevation of 450 meters and the highest point being Lakhanjar hill (612 meters) in the extreme south-east[6]. To the northwards of the vindhyan escarpments, the elevation falls gradually and the land appears to be a rolling plain sloping northwards. The height above mean sea level is 280 meters at Babina station and 255.15 meters at Jhansi station[7]. Main streams which cross this plain are the Shahzad, Sajnan and Jamni. Further north, the relief becomes more diversified and this portion of upland is dotted with numerous granitic hillocks. The average elevation is about 270 meters above mean sea level. These hillocks have been rounded by weathering processes. Apart from these hillocks, two main dissected ranges transverse this portion. The one starts from Baruasagar and runs north-eastwards through the tahSils of Jhansi and Moth. The other starts from Kathera (in extreme south of Mauranipur tahsil) and runs northwards. The south-eastern portion of upland is bounded by the vindhyachal range in the north and the Panna range in the South. A plateau lies between these two ranges running from east to west. This portion of upland has an average elevation of 300 meters above mean sea level. The vindhyachal range runs westward from village Balwahi near the Yamuna to the Anusuiya hill and reappears in Hamirpur district. The range is low in the east as compared to the west. The Panna range, forming the southern boundary of the region in the extreme east, has the average

height of 150 meters above general level of the plateau.

Lowland Bundelkhand :

In the extreme south of the low land the granites often appear in the form of rounded hillocks, but these become rare towards the north and finally disappear near the town of Rath. To the north of this town, there is nothing to disturb the stretch of the plain. The granitic plain does not show homogeneous characteristics in its whole stretch. In west of the Dhasan river, the granitic plain is highly eroded by the tributaries of the Betwa and Dhasan rivers while in the east of the river, it is less eroded than that of the west, although granitic outcrops are not rare. The Contour line of 150 meters may be taken as a dividing line between the areas of granitic plain and the low land. The average elevation of the plain varies from 225 meters in the south to 120 meters in the north. The general slope is from south-west to north-east. The heights above mean sea level at some places will tend to show the general slope of the plain. In the west, the height at Mauranipur is 209.70 meters and about 25 miles to the north-east at Garautha it is 174.60 meters, further north-eastwards at Gohand (Rath Tahsil, it is 149.40 meters and at Kurara (Hamirpur tahsil) in the tract between the Yamuna and the Betwa, it is 121.80 meters. In the middle of the plain, the height at Mahoba is 210.30 meters which falls north-eastwards to 121.80 meters at Ikauna (Maudaha tahsil) and 109.80 meters at

Pailani (Banda tahsil). In the east, the same pattern of sloping is found. The height at Chitrakutdham is 129.90 meters which falls to 102.60 meters at Rajapur near the Yamuna.

The plain is well drained by the Pahuj , Betwa, Dhasan Ken, Baghain, Paisuni and their tributaries. There are well marked watersheads. In the west, a water divide separates the drainage basin of the Pahuj from those of the Kunchmalanga and non which are separated by a higher ground in the south-east from the Betwa valley. The Betwa valley is separated by another piece of higher ground bordering the river from the Birma-Chandrawal plain. The Ken-Baghain plain, lying in the middle east, is less eroded than the Birma-Chandrawal plain. In the extreme east, a triangular area in the east of the Baghain river is drained by many northward flowing streams which form numerous small doabs.

Drainage Pattern :

The drainage pattern of a particular region shows the natural plan of water system in that area. It is generally recognised that drainage patterns relfect the influence of such factors like the initial slope, inequalities in rock-hardness, structural controls and the recent geological and geomorphic history of the drainage basin[8]. The slope of the land runs from south-west to north-east and forms the natural drainage system of the region because all the streams

flow according to the slope (Fig. 1.3). The nature of the streams is consequent and they form dendritic drainage plan. The region is drained by the Yamuna system. The Betwa, the Ken, the Baghain, the Dhasan etc. are the main tributaries of the Yamuna. The rivers, which originate from the vindhyans, join their main rivers after flowing through the upland and low land. A continuous process of soil erosion has been into operation in the south consequently a badland topography has been produced by gully formation. The rivers and streams have cut their banks abruptly and flow with fast speed. Flowing in the north plain called as 'Trans-Yamuna Plain', they receive considerable amount of water and form the meanders.

The geologic structure and surface configuration exert their impact directly on the drainage pattern. In the southern upland, the river courses are mainly straight and banks are steep while in the northern low land, they present many loops and bends. Their speed is slower on account of which the rate of erosion decreases and the deposition of finer alluvium begins. The drainage direction in the south is from south to north and in the north it varies slightly from south-west to north-east. Only Yamuna river flows from north-west to south-east. The main rivers of the region are :-

<u>The Yamuna</u> :

Thisis the main river of the region. It enters in the region at village Sitaura in the Jagmanpur Jagir[9] (Jalaun district) where it is joined by Sindh river. It makes the

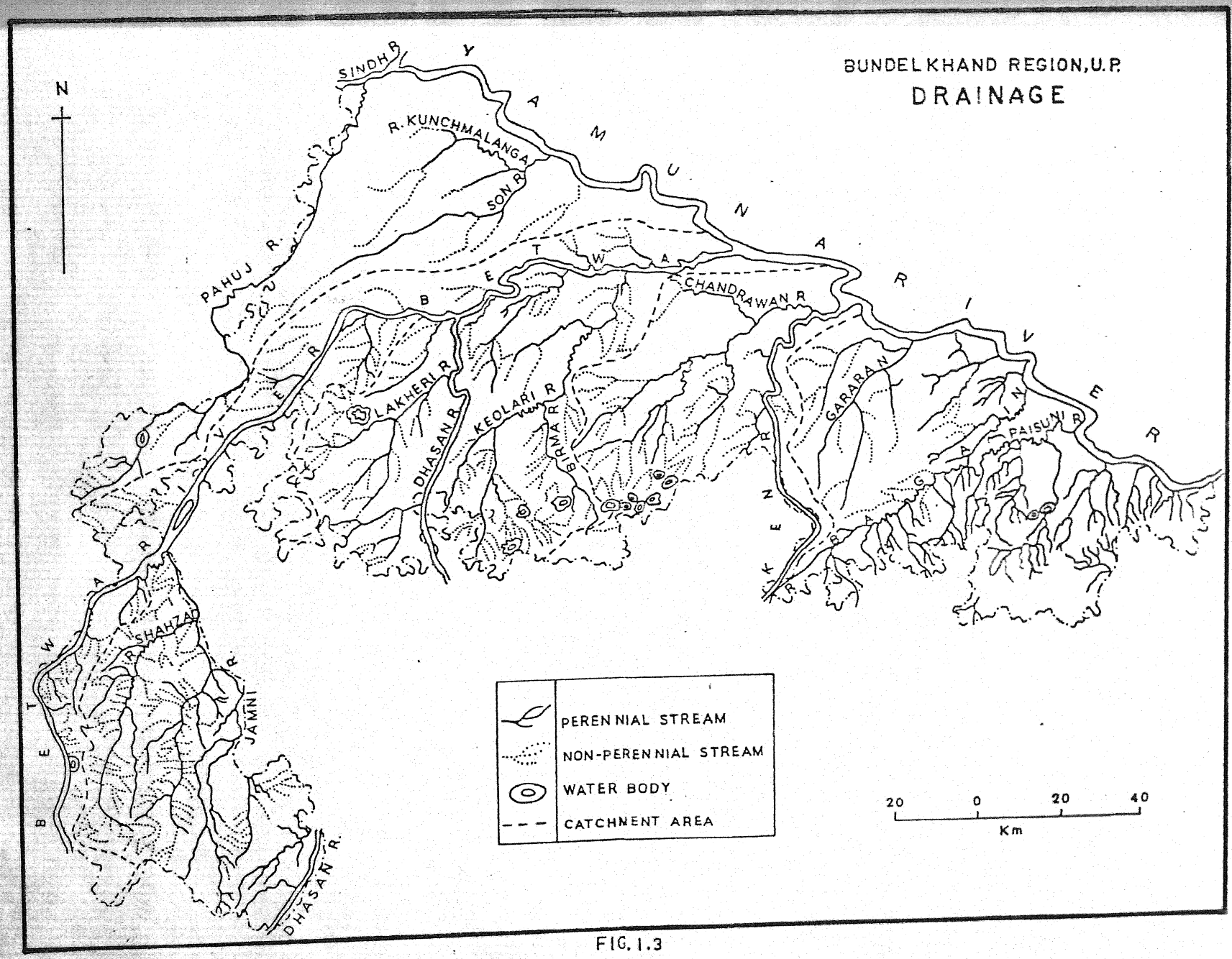
BUNDELKHAND REGION, U.P.
DRAINAGE
N
SINDH R.
YAMUNA RIVER
R. KUNCHMALANGA
SON R.
PAHUJ R.
BETWA R.
CHANDRAWAN R.
LAKHERI R.
DHASAN R.
KEOLARI R.
BIRMA R.
GARARAN
PAISUNI R.
KEN R.
BETWA R.
SHAHZAD R.
JAMNI R.
DHASAN R.
PERENNIAL STREAM
NON-PERENNIAL STREAM
WATER BODY
CATCHMENT AREA
20 0 20 40
Km

FIG. 1.3

entire northern boundary of the region. It is insignificant for the purpose of irrigation as the stream is well below the level of the southern bank (right bank) which, with few exceptions, forms an abrupt cliff of 20 to 60 meters of height, and does not permit successive penetration. In the study area, the length of this river is about 280 kms but the width varies according to the season and terrian. In Banda district it covers a width of 300 feet in May, 1300 ft. during the rains and in Jalaun district 600 ft. in May but 1600 ft. in the rainy days. The depth of the river varies from 20 ft. to 50 ft. Ravine topography and the cliffed banks render the river useless for irrigational purpose except the lift irrigation at few places.

The Betwa :

The Betwa, with its several tributaries, is another main river of the region. It rises from the vindhyan ranges near Kumari (Bhopal) and enters into the region near Dhogri (Lalitpur district). Flowing northwards for about 96 Kilometers, it turns in north-east direction and joins the Yamuna near Hamirpur town. The Jamni, Dhasan and Birma are the important tributaries of this river. The stream is generally confined between elevated banks and flows in a deep rocky channel forming a series of deep pools and picturesque character. Near Badron, seven miles

north-west of Jakhaura, is the Karkara fall facing east and cutting its way through a narrow gorge of volcanic rock purple brown in colour.

The Ken :

The Ken also rises from the vindhyan hills in Damoh district of Madhya Pradesh. It touches the region at the village Bhilharka near Kartal (Nairini tahsil) and joins the Yamuna near Chillatara village (Banda tahsil). The right bank of the stream is generally high and steep and ravines can also be seen there. But the left bank is gently sloped and is subject to fluvial action which has formed an extensive alluvial plains called 'Tarai' or 'Tir' or 'Kachhar'. From Ken, several canals have been taken out and they serve agriculture through irrigation.

The Dhasan :

The Dhasan, a tributary of the Betwa, approaches the region at the village Bangwan (Mahroni tahsil) by cutting its way through the Vindhyan hills[10]. The Sukhani, the Lakheri and the Chuinch are the main tributaries of the Dhasan. It has been dammed at Lahchura in Jhansi district where the Dhasan canal system is already located at Pahari (opposite Deori) and a second water reservoir has been made for the canal system. Hence, it is very important river of the region.

The Pahuj :

Rising in Gwalior district of Madhya Pradesh, the river enters in the region at the village Lalaunj in Tahsil Jhansi. It flows mostly through rugged topography and does not have a deep bed. It is a small river, but during the monsoons it is subjected to sudden rush of water and causes devasting floods. It is useful neither for irrigation nor for navigation due to ravines and nallas.

The Baghain :

This river rises near Panna (Madhya Pradesh) and touches the region at the village Masauni Bharatpur (Banda). The banks of the stream are generally shelving, but at some places they are abrupted. It is a small river but dangerous in rains because it pours down a large quantity of water. The sand and Kankers of its deposits are very much useful for building and road construction. It is believed that Baghain bears age bearing rocks.

The Paisuni :

The Paisuni makes its appearance at Chitrakut just after taking its source in M.P. across the Banda district. Though very small in length and width both, mythologically it has great importance specially for 'Hindus'. It was associated with Ram's exile during which he lived for some time on the banks of this river. Economically it has

also significance for Karwi tahsil where lift irrigation scheme has been launched through this river and it also provides drinking water facilities to the Patha area of the region.

Considering all the rivers, concisely chief characteristics of the streams are as follows :-

(i) Yamuna is the main river in the study region which is navigable throughout the year.

(ii) All other streams, which are the tributaries of the Yamuna river, have their origin from the Vindhyan ranges and are not suitable for navigation throughout the year.

(iii) Geologically, all the streams excepting the Yamuna have their origin in quartz reefs and veins of crystalline rocks. This nature of rocks often creates the floods in the monsoon period.

(iv) During rains, all the streams abruptly swell up, but subside after the rains.

(v) To some extent, all the streams are free from sand and silt sediments and provide irrigation facilities to the region.

**Climate** :

The central position of the region between the

monsoon types of maritime climate of the east coast (the Bay of Bengal) and the tropical continental dry climate of the west (Indian Desert) imposes the features of transitional climate. The climate of the region is characterised by excessive heat during the summer months and mind cold during the winter. The average annual temperature is high throughout the region. The mean annual temperature of Orai is 22.50°C. and that of Jhansi is 26.50°C but their monthly mean values vary considerably from the annual means. The region gets the maximum rainfall from the south-westerly monsoon advancing towards north-west. The mean annual rainfall varies from 90 cms in the north-west to about 120 cms in the south-east. (Fig. 1.4A). The year may be divided into three seasons:-

(i) a cool dry season of northerly winds from mid-October to February followed by

(ii) a hot dry season from March to the middle of June, opening way to

(iii) a hot wet season of south-westerly winds from the middle of June to mid-October.

From mid-October onwards to February, the weather gradually crystallizes into cool and mainly dry season. The mean of daily minimum temperature is recorded by Orai (8.44°C) followed by Jhansi (9.2°C) and Banda (9.6°C) in the month of January. December and January

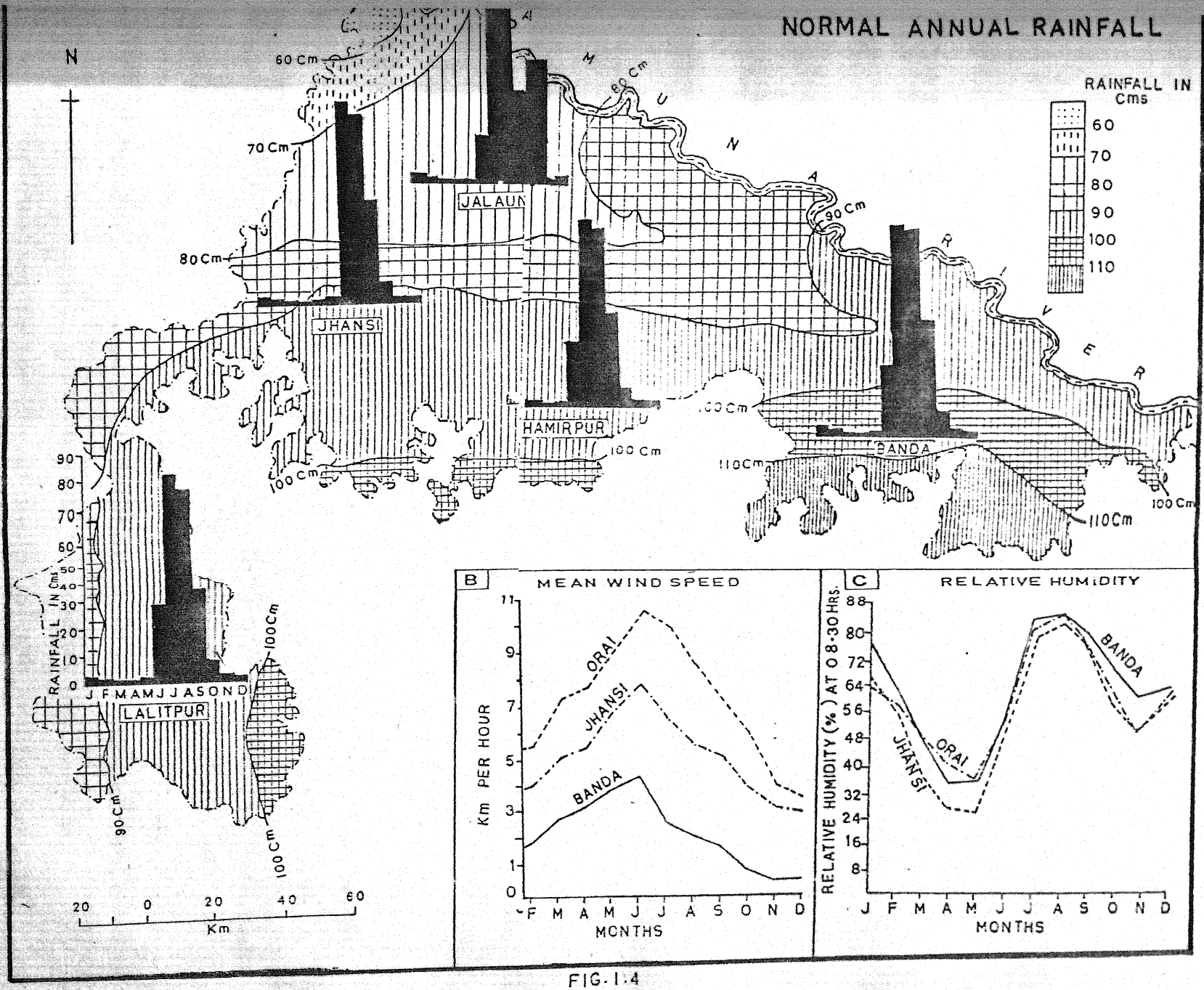
NORMAL ANNUAL RAINFALL
N
RAINFALL IN Cms
60
70
80
90
100
110
60 Cm
70 Cm
80 Cm
90 Cm
100 Cm
110 Cm
JALAUN
JHANSI
HAMIRPUR
BANDA
LALITPUR
RAINFALL IN Cms
J F M A M J J A S O N D
20 0 20 40 60
Km
B
MEAN WIND SPEED
Km PER HOUR
ORAI
JHANSI
BANDA
J F M A M J J A S O N D
MONTHS
C
RELATIVE HUMIDITY
RELATIVE HUMIDITY (%) AT 0 8-30 Hrs.
JHANSI
ORAI
BANDA
J F M A M J J A S O N D
MONTHS

FIG. 1.4

are the coldest months of the season when cold waves sweep over the region from the west or north-west, the nights become chilly and frosty. Sometimes, the western cyclones provide the rainfall which never exceeds 5% of the annual rainfall. This rainfall is much beneficial for the crops.

By March, the days and nights get warmer. The heat continues to increase upto May and mid-June. May and June are the hottest months of the season. The average daily maximum temperature of 43°C is recorded by Banda in May. Banda records the highest number of sun-strokes every year between the period of May and mid-June, probably due to intense terrestrial radiation and lack of haziness in the sky. One or more pre-monsoon showers with lightening and hail are occasionally marked in the region in the months of March and April.

With the advent of summer monsoon in the third week of June[11], the temperatures begin to fall. The mean monthly temperatures during the rainy season vary between 22°C to 25°C with relative humidity varying between 70% to 90%. The month of July, August and September receive the maximum share of rainfall (above 95%). Towards the month of October, the amount of rainfall decreases. The orography of the region, related with the tropical depressions originating in the Bay of Bengal and the Arabian sea, is responsible for the rainfall. The south-west winds are

observed from June to October. The winds flow due to a low pressure area in north-west India. So they arrive from both the Arabian sea and the Bay of Bengal. The direction of winds inthese months are westerly or south-westerly. The vilocity of winds is maximum between the months of April to July (Fig. 1.4B). Jhansi records the mean wind speed of 3.9 Km. per hour in January, 5.8 km. in April, 8.2 km. in June, 6.9 km. in July and 4.3 km. in October[12]. Relative humidity (at 08.30 hrs.) varies between 26% in May to 88% in August (Fig. 1.4C). In rainy season, the region receives the rainfall above 80 cms. The distribution of rainfall is irregular in space as well as in time. Although an amount of rainfall received in rainy season is quite enough for agriculture, facts are otherwise. In fact, in agriculture, it is not only total amount of rainfall which is sufficient for the needs but the proper amount of rainfall, required by a particular crop at a particular time, is significant much. The arrival of monsoon is uncertain. Sometimes it may start one or two weeks earlier or later. Similarly the summer monsoon may end earlier or protract more making the sowing of 'rabi' crop uncertain.

Natural Vegetation :

It is the greatest self-renewal resources and one of the most striking features of a landscape. The forests

are of vital significance to amplify the effectiveness of rainfall by minimising run-off, maintaining the water table and increasing the humidity by transpiration. Tiwari remarks that forests are an important source of fuel and raw materials, such as timber, bamboos, lac, gum etc. They further help in the conservation of soil fertility and play an important role in the maintenance and regulation of water regime of the land. The organic matter they yield increases the water holding capacity of the soil, thereby reducing run off------ they exert a beneficial influence on agriculture and on the climate of the region where they are found[13].

The forests of the region cover 239993 hectares of land representing 8.10% of the total geographical area of the region. This is less than the goal set by the National Forest Policy of India. The district-wise forest cover and per capita forested area have been shown in table 1.1. Banda and Lalitpur districts possess more than 60% of the total forested area of the region, while Hamirpur, Jalaun and Jhansi districts have only 35%. The per capita forest cover is also the lowest in the districts of the region. Lalitpur shows the maximum per capita forest area (0.16 hectates) followed by Banda (0.07 hectares), Hamirpur, Jalaun (0.03 hectares each) and Jhansi (0.02 hectares).

Forests are distributed in the region according to different ecological combination of rainfall, soil and topography. The upland areas are richer in forests than

TABLE 1.1

FOREST COVER IN THE REGION, (1983)

| Districts | % of forest area to | | Per capita forest area (in hectares) |
|---|---|---|---|
| | Total Forest area of the region | Total area of the districts | |
| Jhansi | 13.56 | 6.64 | 0.02 |
| Lalitpur | 27.67 | 13.40 | 0.16 |
| Hamirpur | 15.54 | 5.18 | 0.03 |
| Jalaun | 10.57 | 5.62 | 0.03 |
| Banda | 32.66 | 9.73 | 0.07 |
| Region | 100.00 | 8.10 | 0.06 |

the low land areas due to undulating topography and the rocky soil cover. The density of forests decreases from south to north (Fig. 1.5). The tahsils of Mahrauni, Lalitpur, Jhansi, southern portion of Mauranipur, Mahoba and Karwi are covered with forests which are dense in the mountains and river valleys. The Chief trees are teak, salai, mahua, dhaw, saina, dhak, khair tendu and sej. Although the forests are almost absent in the northern plain, some patches of Babuls are found. The ravine tracts of the larger rivers are marked with shrubs and grasses. The grass lands of considerable extent are found in Jhansi and Jalaun districts. In the northern plain, the forests have been badly destroyed hence less important, but in the south, these are the main source of income. The people are benefitted as they get the employment in

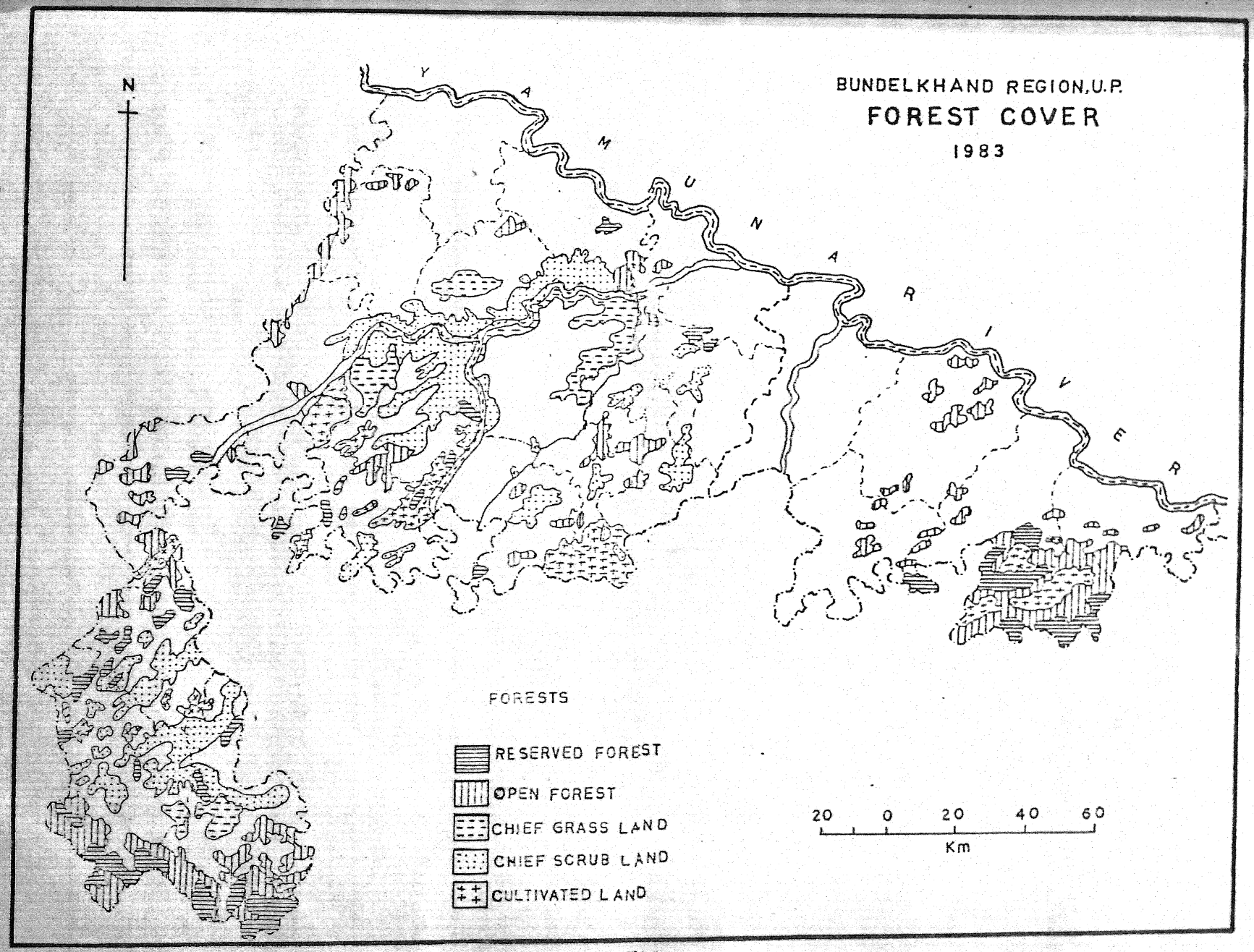
N
BUNDELKHAND REGION, U.P.
FOREST COVER
1983
Y A M U N A R I V E R
FORESTS
RESERVED FOREST
OPEN FOREST
CHIEF GRASS LAND
CHIEF SCRUB LAND
CULTIVATED LAND
20 0 20 40 60
Km

FIG. 1.5

the forests and avail wood for housing, fuel and other purposes. For the conservation and administration purpose, they have been classified under three categories (Table 1.2) :

(i) Reserved forests,
(ii) Protected forests,
(iii) Unclassified forests.

(i) Reserved Forest :

These forests are fully controlled by government and treated as national prosperity. The percentage of reserved forest in Jhansi is 47.69, in Banda 32.56, in Jalaun 13.43 and in Hamirpur 4.00.

Table 1.2

TYPES OF FORESTS AND THEIR DISTRIBUTION (1983)

| Districts | Percent to total Forest Area under | | |
|---|---|---|---|
| | Reserved forests | Protected Forests | Unclassified Forests |
| Jhansi including Lalitpur | 47.69 | 00.89 | 51.42 |
| Banda | 32.56 | - | 67.44 |
| Hamirpur | 4.00 | - | 96.00 |
| Jalaun | 13.43 | - | 86.57 |
| Bundelkhand Region | 24.02 | 00.89 | 75.09 |

Source : Office of the Chief Conservator of Forest, U.P., Lucknow.

(ii) Protected Forest :

These forests are also under the control of government but the 'Dund' is occupied by the people. Licence are to be issued to people to cut the trees and to graze the cattle. In the study region, such types of forests are found only in Jhansi district.

(iii) Unclassified Forests :

These forests are owned by landlords and known as 'Pachpan paintalis'. A compromise was laid down by the Government with zamindars in year 1880, in which it was decided that after payment of all expences of collection, supervision etc., profits should be divided between government and zamindars in the proportion of 55 and 45 percent respectively. From this clause of agreement, these forests have been known as Pachpan Paintalis forest[14]. In the study region this type of forest covers the largest area.

SOILS :

Soil is the mainstay of agriculture. In fact, the quality and texture of soils are the main factors which determine the use of land and the prosperity of inhabitants. Soils of the region are either residual or depositional in origin due to their genesis from the Vindhyan ranges. On the basis of physiography, soils of the region vary from the lowland drained by the tributaries of Yamuna to the upland of the Vindhyans. The soils of upland region

are less fertile and suitable for aforestation whereas the soils of low land are richer in fertility and suitable for agriculture.

The first soil survey of the region was conducted at Orai (Jalaun)[15] to determine the regional classification of Soils on the basis of mechanical composition. The main emphasis was laid on the fertility of soils and intensity of irrigation. On the basis of the survey, the soils are classified under four classes namely Mar soils, Kabar, Parwa and Rakar. (Fig 1.6A).

Roy Chaudhary[16] has classified Bundelkhand soils on the basis of their morphological characteristics into two main groups i.e. Black soils and Red soils. Mar and Kabar soils belong to the first group. The second group of soils include Parwa and Rankar soils.

1. Mar Soil :

It is a deep calcarious soil, predominantly blackish in colour. It is often called a 'Black Cotton Soil[17]' which is formed as a result of decomposition or disintegration of the trap rocks. It is a fertile soil and is suitable for agriculture. In Banda, Jalaun and Hamirpur districts, the Mar soil occupies 16.3%, 25.7%, and 25% of culturable land while in Jhansi and Lalitpur districts, this soil occupies 22% of culturable land. It is found in tahsil

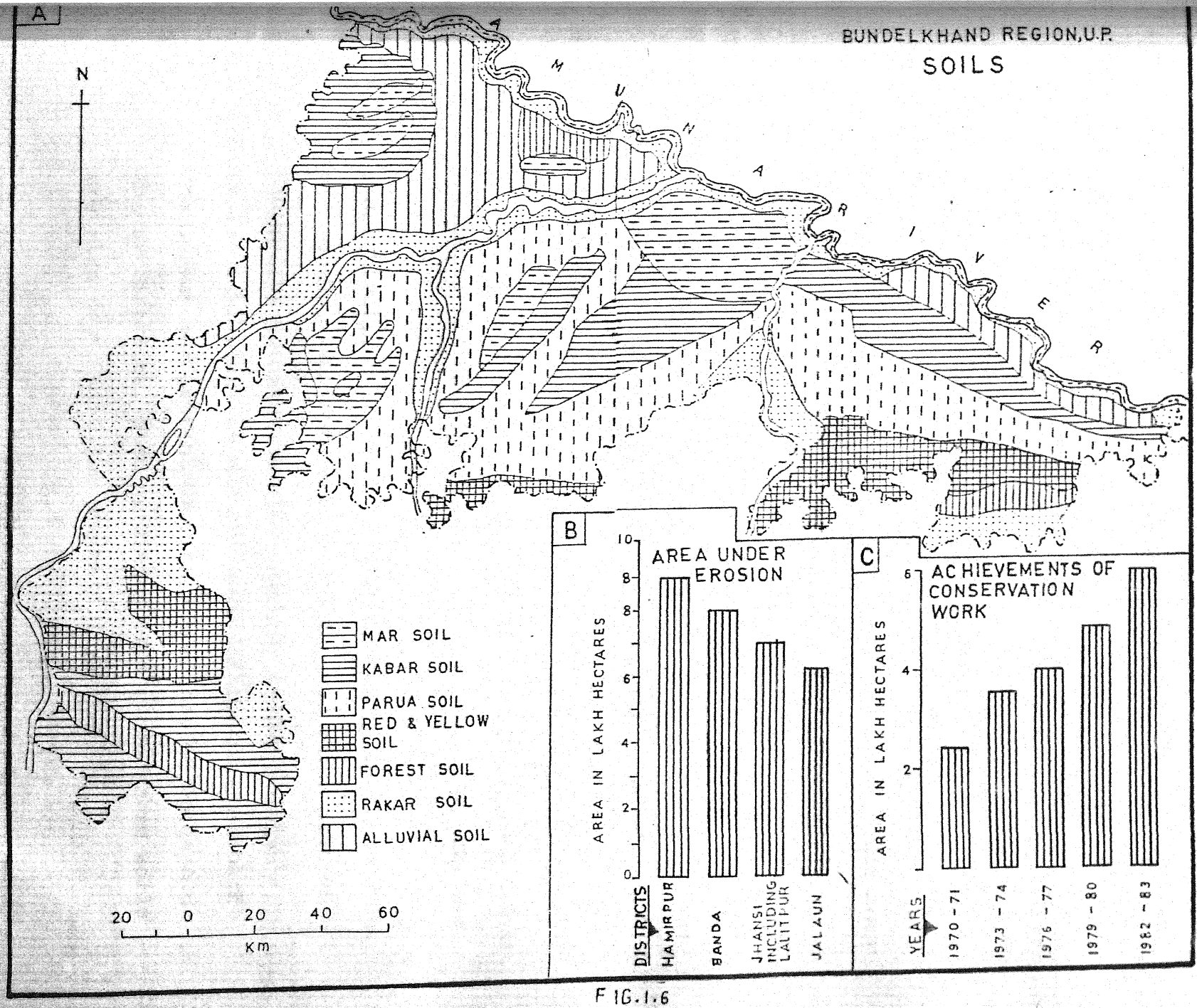
A
BUNDELKHAND REGION, U.P.
SOILS
N
YAMUNA
RIVER
MAR SOIL
KABAR SOIL
PARUA SOIL
RED & YELLOW SOIL
FOREST SOIL
RAKAR SOIL
ALLUVIAL SOIL
20 0 20 40 60
Km
B
AREA UNDER EROSION
AREA IN LAKH HECTARES
0 2 4 6 8 10
DISTRICTS
HAMIRPUR
BANDA
JHANSI INCLUDING LALITPUR
JALAUN
C
ACHIEVEMENTS OF CONSERVATION WORK
AREA IN LAKH HECTARES
0 2 4 6
YEARS
1970 - 71
1973 - 74
1976 - 77
1979 - 80
1982 - 83

FIG. 1.6

of Moth, Hamirpur and south-central part of Jalaun district. Elsewhere, it is found in small patches. The central part of Rath tahsil irrigated by Dhasan canal and central part of Lalitpur and Mahrauni tahsils are also characterised by small patches of this soil. It can be cropped continuously without manures owing to the higher proportion of organic matter. So, the areas of mar soils are prosperous in agricultural economy.

2. Kabar Soils :

It is similar to 'mar' in many respects and is found in various forms ranging from a rich dark black to a light brown. It contains alumina, feric oxide, lime, magnese and organic matter. This soil is found in the low lying areas of Bundelkhand Region. In Jalaun, Hamirpur, Jhansi including Lalitpur and Banda districts, 30%, 23%, 22% and 27.8% of culturable land is occupied by these soils respectively. This soil is distributed in low land areas of Maudaha, Hamirpur, Moth, Garautha, northern part of Mauranipur and south-central part of Jalaun district. It is highly fertile and suitable for the production of Gram, Jwar and Cotton. In the Patha area of Banda and Jhansi districts, poor qualities of mar and kabar soils are also found with low productivity.

3. Parua Soil :

Parua is a light coloured sandy soil, admixture of clay and sometimes of sandy loams. Chemically, it is poor in iron, lime, phosphate and nitrogen. Over irrigation is harmful on account of alkine content. It is well distributed along the riverine edges and shares 31% of culturable land in Hamirpur district. In Banda district it occupies 30% of culturable land along the bank of the Ken, Yamuna and Paisuni rivers. While in Jalaun and Jhansi districts, this soil occupies 21% and 20% of culturable land respectively. More or less, it is found in every tahsil of the region but its main areas are the tahsils of Mahoba, extreme south-western Rath, Kulpahar, northern Mauranipur, Garautha, Moth and Northern part of Jalaun district.

4. Rakar Soil :

Rakar is stony soil usually found on the sloping surface of the ravine land in Bundelkhand. It is coarse sand and deficient in organic matter and nitrogen. It is divided into 'Moti and Patli', the former representing deteriorated mar and kabar and the latter being excarnated light soil. In Jhansi, Banda, Jalaun and Hamirpur districts, the Rakar soil occupies 30%, 29%, 20% and 19% of the culturable land respectively. It is found along the banks of 'Nalas' in Mahoba tahsil and rocky edges in Lalitpur, Mahrauni and Jhansi tahsils. It is useful, where irrigation amenities are available.

Other soils like Goind, Dandi, Forest, Tarai including alluvial kakar red and yellow are also found in the region. But the area under these soils is small and negligible in comparision to the major soils. The percentage of these minor soils in all the districts of the study region is given in Table 1.3.

TABLE 1.3

PERCENTAGE OF MINOR SOILS

| Districts | Percentage of minor Soils |
|---|---|
| Jhansi including Lalitpur | 5.00 |
| Banda | 7.3 |
| Jalaun | 2.0 |
| Hamirpur | 2.0 |

Erosion and conservation of Soils :

Soil erosion is a serious problem in the study area due to undulating topography, high velocity of the streams, unconsolidated soil texture in the ravines Rakar and Parua soils. The area under active soil erosion in the region extends over about 30,00000 hectares of land. Hamirpur district accounts for the highest land (9,0000 hectares) under erosion (Fig. 1.6B) followed by Banda (8,000 hectares), Jhansi including Lalitpur (7,00000 hectares) and Jalaun (6,20000 hectares).

Conservation of soil is to protect it from the

erosion. At first, a soil conservation programme was launched during 1957-58 in the region. But some effective measurements for soil conservation were taken after third five year plan (1968-69) in the region. A progress of soil conservation in the region can be assessed from the following table (1.4) and Map (Fig. 1.6C).

TABLE 1.4

PROGRESS OF SOIL CONSERVATION IN THE REGION

| Years | Target in Lakh hectares | Achievement in Lakh hectares |
|---|---|---|
| 1970-71 | 2.2 | 2.4 |
| 1973-74 | 2.5 | 3.5 |
| 1976-77 | 3.5 | 4.0 |
| 1979-80 | 4.6 | 4.7 |
| 1982-83 | 5.3 | 6.0 |

According to soil and conservation department Jhansi, about 18 Lakh hectares of land was reclaimed upto 1982-83 in the region. It is only 50% of the total land which is under erosion. While every year, a thousand of hectares of land is subjected to erosion. Hence both extensive and intensive programmes of soil conservation are needed for the region.

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# CHAPTER II

## SEQUENT OCCUPANCE AND CULTURAL DEVELOPMENT

Bundelkhand characterised by its hilly terrain and natural resources, occupies the central position in the country. Therefore, it has been attracting not only kings and sages alike through all the ages but also the invading armies of the kings, merchants, caravan of traders and religious missionaries who used it as a 'gate way' between the north and south in their early attempt of success from one part to another. That is why we find Bundelkhand blessed with huge cultural remains well marked in quality as well as variety. The invasion, land occupance and colonization of the Aryans, Sungas, Kushans, Guptas, Chandelas, Muslims, Bundelas, Marathas as well as Britishers have created a variety of cultural landscape in the region. They have, establishing adjustment with physio-cultural environment of the region, laid down their cultural imprints which may be observed in the remnants of rural and urban settlements as well as historical buildings. The aim of this chapter is to analyse the sequent occupance and cultural development of the region in the context of cultural elements: Culture, culture area, Cultural history, cultural landscape and cultural ecology which form the core of cultural geography. The study of sequent accupance and cultural development of the region may be made into following

periods :-

(i) Pre-histroric Period

(ii) Ancient Period

(iii) Medieval Period and

(iv) Modern Period

(A) British Period

(B) Post-British Period.

(i ) Pre-historic Period :

In the pre-historic period, the study region was the land of primitive tribes like kols, Gonds, Sahariyas, Bangars etc.[1] They developed 'hand-axe culture' based on natural phenomena which is testified by the pre-historic tools found in various sites in Banda[2], Hamirpur, Lalitpur and Jhansi districts of the region. Differentiation in hand-axe culture may also be noticed due to increasing techniques and knowledge. The people of lower paleolithic age were hunters living practically on flesh and fruits, and used Crude stone-tools which were not yet developed in distinct types, might have been served the purpose of cutting wood and piercing animals. The middle stone age men were still leading an unsettled life, dwelling on the banks of rivers, getting food by hunting animals and collecting fruits and roots from the jungles. However, they produced more suitable instruments to satisfy their

daily needs. Regarding the blade flake technique Allchin observes, " It is worth pointing out once more that the blade flake technique of the middlestone age is quite distinct from the blade technique of the late stone age. Not only are the size and proportions of the blade flakes and blades entirely different, but the size of the bulbs of percussuions and the depth of the flake scars are much greater in the former case than the latter, indicating a completely different method of applying the blow."[4] The polished stone axes of the neolithic age with typical pointed butt are largely found all over Bundelkhand. Their association with pottery and metallic objects suggests a wide expansion of this culture into the main riverine tracts whose scrubs, owing to the discovery of fire and metals, must have been cleared and converted into agricultural fields. At that time population was sparse but with the gradual increase of population, the problem of fooding as well as hunting rapidly increased. To solve the problem, the neolithic men had taken the revolutionary steps that mark the transition to a new economy and a higher cultural grade. The Neolithic people, unlike their predecessors, led a settled life by cultivating fields and producing food instead of collecting it. It is due to invention of metal and developed agricultural implements. They built houses and domesticated cattle viz. sheep and Goats

all these resulted in compact village society[5]. Religiously, they had given great impetus to the unlooked God or Goddess.

Overall, the people of 'hand-axe' culture suffered from one great limitation. Since they had to depend on tools and weapons made on stones, they could not found settlements away from the hilly areas. Further, even with greater effort, they could not produce more than what they needed for their bare subsistence. However, it is not need to say that they provided socio-economic base for the people coming next.

(ii) Ancient Period :

In the Mahabharat times (950 B.C.) when Aryan marched from north-west to the east, first glimpse of Aryan tribes namely Chedi, Haihayas or Vitihotras who lived in the land lying between the yamuna and Vindhyas (Modern Bundelkhand), had been exhibited in the region. They continued their sway till they all were absorbed by Nandas empire of Magadh in the fourth Century B.C. However it was totally unknown for Rigvedic Aryan people[6]. With the techniques of cutting and burning by axe and firing respectively, forest were cleared and the iron ploughshare, for bringing the virgin land under cultivation, were used. With the result, agriculture had become the chief means of their livelihood. In addition to barley, rice and wheat were

their chief crops. Various kinds of lentiles were also produced. The collection of taxes and tributes seems to have become common. They were probably deposited with an officer called sangrihitri. Besides, various crafts like weaving that were only confined to women, leather work, pottery, carpentary, blacksmithy had also developed. These enabled the Aryan people to lead the settled life. People lived in mud-brick houses or in wattle and daulb houses erected on wooden poles. Society came to be divided into four varnas: Brahmin, Kshatriya, Vaishya and Sudra. The worst position was reserved for the sudras. Caste restriction was less developed. Morally society was much fallen,probably it was due to the contact of Anaryas[7].

In the 4th century B.C., Nanda king (probably Mahapadma) exterminated the vitihotras and extended his rule over the region[8]. After the Nandas, the region became the part of the Maurya empire in the reign of Ashok[9]. Kaushambi was the headquarters of his reign. During 189-75 B.C., the region constituted a part of kingdom of Sungas, particularly in time of Agnimitra and Pushyamitra sungas. The mauryas made an important contribution to the development of rural economy by founding new settlements and rehabilitating the decaying ones by drafting surplus settlers from over-populated areas. The

Sudras who were regarded as the collective property of the other three higher Varnas, meant for their services as slaves and hired labourers. They were encouraged to settle down as farmers in their settlements. It was made possible by the aid granted to them by state. In order to bring virgin soil under cultivation, they were allowed remissions of taxes. Agriculture was the mainstay of economy. Although there was no organised attempt by the state, big tanks and wells were constructed for irrigation[10]. The individual holding of land as well as hired labour was developed. The Upranga and Uparika, the Kar, the vivita taxes were levied on agriculture, individual property and pasture respectively. The mauryans made remarkable contribution to art and architecture also. The introduction of polished pillar shows their technical knowledge. The three Buddha statuettes made of brass found at the Dhanesara khera, near Ichhawar village in Banda district proves the art of metallurgy[11]. The household utensils of copper, such as basin, tripad, cup, cooking pot, saucers, bell and disc etc. and the glass beads excavated from Bhita testify that copper and glass industries were much flourished.

After Sungas, the region passed through the hands of Kushan empire under Kanishka till the time of Vasudeva (145 - 176 A.D.). They introduced better cavalry and the

use of the riding horse on a large scale and turban, tunic, trousers and heavy long coat. They also introduced the satrap system of government. The empire was divided into numerous satrapies and each satrapy was placed under the rule of Satrap[12]. Some curious practices such as hereditary dual rule, two kings rulings in the same kingdom at one and the same time were introduced.

At a later time (300-400 A.D.), the region seems to have been partly under Magh Dynasty which is attested by the magh coins found at the village orha in the Banda district[13] and partly under the Nagas of Padmavati in western parts. At the time of magh dynasty, stone carving was much developed. The kosam inscription of the reign of Bhadramagh informs us of the guild of stone-carvers who had installed asana pattas or seats[14]. Both maghs and Nagas organised a struggle against the foreigners and swept away the alien kushan rule from the region. They played an important role in the cultural development of the region by reviving the vedic rites and the study of sanksrit literature and language.

About middle of the fourth century, the region had been in the hands of the Gupta monarchs viz. Samundra Gupta, Ram Gupta, Chandra Gupta II, Kumar Gupta I and Skand Gupta. The disintegration of Gupta empire began during the last years of Budha Gupta and Bhanu Gupta

regime (477-500 A.D.). After the downfall of Gupta, two seals from excavation of Kaushambi prave that the whole of the Bundelkhand had been overrun by Hunas at the end of fifth century A.D.. However the supermacy of Hunas (Tormana and mihirkul) did not remain more than 40 years. After it, a number of small principalities emerged in eastern part of Bundelkhand. Parivrajak mahraj Hastin and his son samkshobas were two of them. The archaeological evidences prove that Bundelkhand continued to form a part of the Gupta empire during the last quarter of fifth and six century A.D.. The political stability as well as material prosperity of the Gupta regime had proved great impetus to the science, technology, trade and industry as well as indigeneous arts and crafts. The art of jewellery, cotton and silk weaving, pottery etc. had reached its peak during the Gupta age. They were the Gupta monarchs who had firstly issued the coins of gold, silver and copper alike. The coins[15] excavated near Kaushambi and Bhita are the examples, The sound political and economic conditions of the Gupta age as well as developed metallurgy might have been responsible for issuing the gold coins. Gupta also heralded a new epoch in the history of architecture[16] in the region. Vishnu temple and Varha temple (Lalitpur) may be taken as examples. They erected a fort namely Deogarh (Lalitpur) and also constructed road which

may be testified by the two small inscriptions of Gupta character found in kalinjar.

In the beginning of the seventh century, Harshbardhan[17] (606-647) ascended the thrown in the whole part of chih-chito (Modern Bundelkhand) which capital was Khajuraho now in Madhya Pradesh as mentioned by Chinese traveller Huen Tsang. Harsh governed his empire on the same line as the Gupta did except that his administration had become more feudal and decentralized. Land grants continued to be made to the priests for their special services rendered to the state. Religiously, he followed tolerant policy. A saiva, in his early years, became gradually a great patron of Buddhism. He erected many Dharmshalas in and outside of the city where a vaidya was deputed for serving the patients without cost[18], Since he was poet as well as dramatist, he took keen interest in the management of education.

4858

After the death of Harsha, the desruptive forces engaged in mutual destructive warfare[19]. The ruling people seem to have been brought to disaster due to anarchical condition of mutual distinctive warfare and inroads of foreign invaders, their religious wars ended so disastr-ously that they could not hold up the country any longer. As a result, the aboriginal Gonds appeared particularly in the southern part of Lalitpur district[20] and continued

their possession till they were supplanted by the Pratihar Rajput in the eighth century and chandelas in the ninth[21]. They constructed some jain temples and embankments and reservoirs for irrigation which show that they were agriculturists and possessing high degree of civilization[22].

During the first half of the 8th century, the region might have come under the sway of the Yashovarman of Kannauj and in the last quarter of that century, it passed into the hands of vatsraj pratihars, Nagbhatt II. But due to invasion of Rashtrakut king, the Pratihar empire had almost disintegrated, the real founder of Pratihar dynasty, gradually, rebuilt the empire by about 836-885 A.D.. Bhoja's son and successor Mahendrapal I (885-908 A.D.) continued to hold sway over this region till middle of the 9th century.

After the downfall of Pratiharas, Chandelas came in the power from Nanuka (813 A.D.) to Parmala (1202 A.D.)[23]. But cunnigham remarks that Karti Singh was the last king of Chandelas dynasty who 'fought with Shershah[24]

Being good warriors as well as administrators, they constructed several temples, fortress and dug big irrigational tanks like madansagar, kiratsagar, Belatal, etc., Which show their keen interest in the field of agricultural development. Where soil suited for sugarcane, they set-up

sugar mills. All these indicate their peace and prosperity in the region.

Other Cultural Achievements :

Under the purview period, the society was divided into four varnas viz. Brahmin, Kshatriya, Vaishya and Sudra. However, the rigidity of the caste-system had not yet fully developed. The Brahmin enjoyed certain privileges in the society for the high learning. The kshatriyas held power and occupied a respectable position. The vaishyas took up the trade, agriculture and cattle breeding. sudras were treated with disregard and contempt. They served the other three varnas with their manual labour. Chandelas were the lowest section of the society during the sungas[25]. Epigraphic records of the Sunga period mention the names of certain tribes and gotras among which marriages were arranged[26]. The Buddhist literature shows that the idea of caste system was gradually developing on the basis of different arts and crafts in a guild within which marriages were settled. It appears that the Hindu society became like a federation of caste and sub-castes whose members did, some time, inter-caste marriages more frequently in earlier than in later age[27].

During the supermacy of Gupta regime a large number of specialized groups emerged due to the political stability,

material prosperity, science, technology, trade and industry as well as indigeneous arts and crafts. Due to special allegiance of these groups towards their guild intermarriage with the members of different groups within the said guild as well as Anulom and pratilom marriages, many mixed castes and sub-castes developed. That is why we come across with many castes during the Gupta age. It was the Gupta age when sudras were mainly represented as agriculturists. In earlier period they always appeared as servants. In Rajput period, a large number of castes such as potters, weavers, goldsmiths, barbers, leather workers, rope makers, fishermen etc., were emerged which now began to be classified as castes.

Position of Women :

In the Mauryan and Sunga periods, ladies of all the classes enjoyed freedom, particularly in matter of religion. Pardah system was not in vogue. Ladies of higher castes, if not all, received formal education. However, the ladies were mostly trained in house-hold crafts as well as fine arts[28]. In the Gupta age, great emphasis was laid on the chastity of women which resulted in early marriages of the girls. A married women was supposed to be dedicated to her husband. The custom of sati was gradually coming into practice, especially among the ruling families. Widow marriage was becoming unpopular, even in the Rajput period,

women were generally considered mentally inferior. Women continued to be denied the right to study the Vedas. With the growth of property right in Land, the property right of women also increased. Daughters also had the right to succeed to the properties of a widow. Thus the growth of feudal society strengthened the concept of private property.

Foods and Drinks :

Rice and wheat were favourite foods in this time. Milk, curd, butter and Ghee were commonly in use. Fruits as well as sweets were also used. Saktu (Sattu) made of Barley was readymade dish[29]. It is interesting to note that the non-vegetarian food was much popular in Ashok's regime while drinking was in much fashion during sunga, Kushan, Gupta and Rajput periods.

Dress and Decoration :

The fashion of wearing coat, Dhoti, Scarf, Turban were the modish dress, the lower dress of females was 'Dhoti' or Sari as like today. The ladies of upper castes, probably, wore an 'Orhni' decorated with beautiful borders. The sculptures and terracotta figures show that men and women were fond of beautiful long and soft hair[30], especially in Gupta age. The male and female dress had undergone a major change in the later periods. The laides preferred the stitched garments like blouses and bodice (Choli). The

dancers and musicians were shown wearing a embroidered coats, trousers, Jackets and Caps of the varying forms. The sculptures from Kaushambi and Bhita throw ample light on the variety of costumes and the textile materials. In Rajput period, there were no significant changes in the style of dress of men and women in the region.

The ornaments like ring, neclaces, armlets and bracelets were commonly used by men and women both. Cunningham remarks that popular lady ornament of Sunga period was an eleborate mekhla girdle which was made of brilliant red seed popularly known as ratti or Rattika in Bundelkhand[31]. The technical skill in metallurgy and gemnology and so also the abundance of precious metals and gems gave impetus to the art of jewellery in the Gupta age as well as Chandela regime.

Residential Houses :

The houses were generally built of mud and wood before mauryan period but kiln-burnt bricks[32] were used during the mauryan period. The general plan of the houses consisted of central courtyard enclosed by a row of rooms on four sides. Houses of the sunga period considered generally of three or four rooms with either pointed or semi-cylindrical domed-roof and a small opening in each gable to get fresh air and light[33].

The houses of later period were built of kiln-burnt bricks, the kachcha bricks being reserved for foundation purposes. The block of stone fitted with massive iron-ring were probably used as socket for fixing door at the entrances. In subsequent periods, the people constructed multistoryed houses with an open terrace.

Transport :

Many modes of transport for men and goods were used. The Bullock-carts were the main vehicles and the common means of transport. The kings and nobles used horse driven chariot. The boats were used to carry men and materials through water.

Means of Recreation :

The dance and music were the main sources of enjoyment of the people in the mauryan and sunga times. The hunting and gambling were another pastime. Chess was the favourite indoor pastime and cock fights, hunting ball game were out-door games of the Gupta age. While in chandela regime, apart from fairs and festivals, excursions to gardens, swimming parties were widely popular. Fights among various types of animals such as rams, cocks were popular among the masses.

Education and Learning :

The archaeological evidences suggest that Kaushambi and Bhita were great centres of education. There were so many Buddhist Bihars, Hindu temples in Ashok and Gupta regimes where collective instructions and training were given to the monks in Gurkul system. Gupta emperors made special grants for the maintenance of Satras[34] (Alm-houses) where the free food was supplied for the students. The education of grammer philosophy, logic, ethics, politics as well as theology was provided to the Brahmin and politics, laws of administration, archery and military science, the use of chariot, elephat to kshatriyas. The vaishyas learnt about the gems, pearls, corals, precious metals, cloth, perfumes, agriculture and varieties of merchandise and the lower section of society received a hereditary training of singing, dancing, and practising of various indigeneous arts and crafts. This system of education continued upto the chandela period without much change. There was no idea of mass education at that time. People learnt what they felt necessary for their livelihood. The magnificent temples were the places of culture and education. Besides, the Agrahara villages were also the centres of education and learning during this period.

The epigraphic records from Bundelkhand reveal that

the prakrit was the common language till the end of first century B.C. with the dawn of christian era, the prakrit came under the influence of Sanskrit and from the second century A.D. onwards Sanskrit got an upper hand. There is no doubt that Sanskrit was the court language of the Gupta age[35].

Religious Belief :

Buddhism and Jainism were popular in mauryan and Sunga periods. The Kushans worshipped both Shiva and Buddha. While Buddhism was not so important in the Gupta period as it was in the days of Ashok and Kaniska. Brahminism had come to the fore-front, Vishnu and Shiva were widely worshipped. Besides, the cult of Sakti received impetus during the Gupta age. Terracotta Plaugue of Kaushambi (in the University musium, Allahabad), Gajlaxmi and Mahishasur mardani figures from Bhita (Indian Musium Calcutta) testify it. The worship of Surya (Sun God) had been also popular throughout the region. It was Chandela period when the Buddhism almost disappeared from the region. There was marked revival and expansion of Hinduism and again vishnu and shiva were given more importance.

(iii) Medieval Period :

The decline of the chandelas in the region started

at the beginning of thirteenth century with muslim invasion. Mohammad Ghori was the first invader (1192). Since then, the region passed through the hands of Delhi Sultanat rulers as well as mughal emperor Akbar and the successors like Jahangir, Sahjahan and Aurangzeb[36]. Irich, Mahoba, Kalinjar were their headquarters. Though a number of the Parganas and other administrative divisions as well as their headquarters had existed under the preceeding rulers of Delhi, proper development did not take place till Akbar's reign due to political instability. Tiwari remarks that Muslims reign did not fully develop in Bundelkhand region. If their reign however existed for some time, Bundelas had been subedars towards them and later on, they again became free. It may be possible that muslims supremacy had been in Akbar's reign in the region but could not got permanancy for long time. Bundelas always had bothered to Akbar as well as his clans.[37]

The more significant efforts of Turkish invaders were at mutual understandihg which ultimately led to a process of assimilation in many fields, such as art and architecture, music, literature and even in the fields of customs and ceremonies, rituals and religious belief. It is notable fact that there was hardly any change in the structure of the Hindu society as well as in Customs,

manners and ceremonials. The muslim rulers forcely compelled Hindus toadopt Muslim religion but its impact had not been much in Bundelkhand[38], They converted temples and other existing buildings into mosques, built fort at several places like Irich, Moth, etc., Road-sides were shadowed with green trees and constructed travellers' inns at several places. With the emergences of Iodis in the later half of the 13th century, the transport in the region was revived. They developed roads to suppress the rebellions of Gwalior, Babina and Dholpur. Shershah (1540-45), in his very short regime, constructed roads in his military compaign. For the first time, relation between peasants and governments grew during Alaud-din's time and revenue administration was regulated. All the cultivated lands were surveyed in the interest of the people. Alauddin gave facilities in government demand to the peasants in kind of cash. He fixed 50% of the government demand of land revenue. The work left by him was fulfilled by Mohd. Tugluq who tried to improve the economic standard of agriculturists but calamities and rainfall undid his schemes and brought a loss of prestige. Even then, the relationship between peasants and government was on progress and the contfibution of Firoj Tugluq to the peasants' well being can be compared to that of Akbar and Shershah who realized well that in promoting the prosperity of

people and peasants, it was necessary to increase the state income. He constructed canals, wells etc. for irrigation purposes. Shershah took every step to rationalize the revenue administration and built it up from bottom to top. His contribution was on the line of Alauddin Khilzi and Firoz Tuglaq.

The reign of Akbar was much favourable for socio-economic activities as well as cultural developments. He created peaceful political environment for proper administration. Akbar divided the whole of his empire into subahs (Provinces). The Subahs into Sarkars, Sarkars into Dasturs (Districts) and Dasturs into parganas. This systematic organisation of territorial units resulted in establishment of a administrative units of authorities which accelerated the pace of cultural development in the region. Akbar's revenue assessment policy which was based on land measurement and not on agricultural production, encouraged people to increase cultivated land in the form of forest clearings and waste land reclamation. The generous policy as well as peaceful rules of Akbar suited well for industrial development also. All the towns as well as large villages produce textile in large quantity to fulfill the local needs[39]. Moreover, Akbar tried for peace and harmony among religions in other ways as well. He also introduced a number of social and educational

reforms. He stopped 'Sati Pratha' i.e. the burning of widow, unless she herself, of her own free will, persistently desired it. The uses of wines and spirits were restricted.

Akbar also revised the educational syllabus, laying more emphasis on moral education and mathmetics and on secular subjects such as agriculture, geometry, astronomy, rules of government, logic, history etc. He also gave patronage to artists, painters and musicians.

The political organisation which was established by Akbar in the region, continued till the Jahangir and Sahjahan but it could not stay in the time of Aurangzeb. Moreland remarks that during Akbar's time the rate of tax was one third of today inwhich minor changes occurred during Jahangir but it became one half of today in the time of Sahjahan and Aurangzeb[40].

Aurangzeb demolished Hindu temples and erected mosques in their place. A striking feature of the economic and social situations during the mughal empire was the glaring disparity between the highly ostentatious life style of the ruling classes on one hand and the acute poverty of the people- the peasants, the artisians and the labourers on the other.

Besides above mentioned developments, the muslims played an important role in the construction of tomb, baolies,

public buildings, places etc in the region. The mosque in the ruined fort at Irich and the Dargah (Tomb) near the lake at Talbehat testify it. They also made a distinctive contribution in the field of painting and introduced new themes depicting the court, battle scenes and the chase and added new and new forms. For education, they set up their own maktabs (Schools) in which education was imparted to the children of their community according to Islamic system. These maqtabs were attached to mosques and were supported by Alms or gants by the governments. By 14th as well as 15th centuries, Irich had become a centre of Islamic learning as well as dar-ul-uloom (University).

After the Mughal's reign, the study region came under the possession of Bundelas as well as marathas since begining of sixteenth to eighteenth century. Bundelas paid attention in the construction of magnificent temples, forts, palaces, tanks etc. Jahangir mahal, Narsingh temple, Ram Raj Mandir, Bawan Durg, Bawan tank, Bawan Baolies are the examples. These Buildings were made of rubble stone and bear the influences of the foregoing chandelas and the contemporary muslim styles of architecture. The frescoes in the Narsingh temple at talbehat which are ascribed to the 16th century, represents the Bundelas art. Besides, religious themes also depict scenes from the court life of the Raja (Probably Devi Singh) at whose behest the murals were painted. The Hindu system of education

were prevailed under the Bundelas. Before Bundelas there was probably no intermediary between the immediate Raja and the cultivator but during their regime, the relationship between the landed proprietor and the cultivator was largely feudal in character. The feaudal chief as proprietor generally was entitled to make his own arrangements for the collection of his dues from the cultivators, the latter being his 'raiyat' for all practical purposes.

Not much improvements were made under the short rule of the marathas. Their most common methods of revenue system as well as administration were in the line of mughals. They introduced Dekhaparkhi system under which revenue demand was fixed at the commencement of the year. Some time leases were given to the headman who then became responsible or leases were given by the state through the headman to each cultivator. The rate of rent was calculated either on the basis of crops or according to the soils. Finally their expedient was adopted to collect revenue as much as possible. So that the people were generally impoverished while in the case of villages, leases were run up often to ruinous extent and led to very great extortion. Generally no distinction was recognised between land-lords and tenants. All, being cultivators, were paying rent to the state. Some times arbitrators representing the interests of the state and of the cultivators

were appointed to make evaluation of the produce of each holding and if the crops were below average a proportional reduction was made from the rent of each cultivator. The economy, being much influenced from mismanagement of administration, was very straited. There was no remarkable change in the position of small peasants but the power of large farmers, muquadams and chaukidars increased many times. The hereditary possession got much credit due to issuing leases for long duration. With the result, keener competiton tendency was accelerating among small and large farmers. Therefore, the form as well as size of Tappas or parganas changed due to clearing and reclamation of land. Thus various changes had been noticed in the cultural landscape of tappas or parganas. Apart from it, both the Hindus and muslims were classified in various societies. It was based on religion, area, language as well as caste. Not much so, the society of high class people was different from low caste in many aspects. Caste was dividing power and main element of disintegration during maratha time. Marathas also took interest in the education of the people. Raja Gangadhar Rao, in particular, was known for his literary and cultural activities.

(iv) Modern Period :

(a) British Period :

After the Poona agreement in 1803, Bundelkhand

region came under the possession of the Britishers[41]. The northern Bundelkhand i.e., Jhansi, Jalaun, Hamirpur and Banda (Now U.P. Bundelkhand) was called British Bundelkhand[42] and the southern part was fragmented into numerous parts under the charge of central India Agency[43]. The British rule made remarkable changes in the economy of the region. The principal concern of the East India Company was the realization of as large a revenue as possible to enable itself to carry on war of conquest and to furnish large dividents to its share holders. It demolished many Raj vansas. The Taluqadars and Jamindars who were rulers, remained as a contractors to realize revenue tax. The villages of Rajas had been sniezed and their power demolished. Thus East India Company brought bad days in the region. Britishers, not paying attention to the religious unity of Hindu and Muslim, provided aid as well as stimulation to the christian missionaries for propogation of their religion. Thus not only politics but religion as well as culture of the region also came in the grip of bad days. With the result, multi-sided rule turbulences spread in the opposition of Britishers and the revolution of 1857 took place. But it could not success and the Britishers re-established their rule. In such condition, capture, corruption as well as prize distribution to their followers had been main parts of their rule.

After political revolution (1857), stable administration was maintained and the permanent land settlement survey were carried from 1857 to 1915 for ascertaining and limiting the demand of government. They acquiesced the zamindari system which existed here and strengthened itself by creating new zamindars. The zamindars who were made the real proprietors of the land were of the following types :

(i) Single and joint zamindars

(ii) Perfect and imperfect pattidars.

(iii) Bhaiyachara

The zamindari right has been the rentfree grant of the waste land to the ancestors of the present proprietors. Such grants were provided by the actual sovereign or his local representative and the land was brought under cultivation by grantee. After many generations, the grantee obtained zamindari right over the land. The necessity for conciliating and employing the old chief as well as the desire of an indifferent governor to save himself from the trouble in revenue management are the responsible factors for the evolution of zamindari[44].

In pattidari tenure, a co-sharer had the right to cultivate as much land as he could pay his quota of the

demand. His interest in the village and his responsibility for the revenue rose and fell with the extent of his cultivation. In Bhaiyachara villages, the whole of the land is partitioned out among the brotherhood and the share and responsibility for the government revenue are usually fixed in proportion to the actual area occupied by each co-sharer. Thus the principle of sharing in Bhaiyachara was democratic equality of right in the area.

The Pattidari and Bhaiyachara villages were divided into perfect and imperfect form. When co-sharers of the land did not divide the whole, but left a part still joint, it was the imperfect form and completely divided land was represented as perfect form.

Inspite of the changes made by the U.P. tenancy Act (1939), the relation between the tenants and zamindars continued to be embittered as many of the demands of the farmers still remained unsatisfied. It was realized that the economic conditions of the agriculturists could not be improved without a complete transformation of the existing structure of the tenure system.

Though they were exploiting nature, their contribution, was multisided in maintaining peace and security as well as developing socio-economic and cultural activities. In the field of education, at beginning, Britishers did not pay any

attention to open new institutions but took over the management of those that already existed but during the disturbances of 1857-58, educational affairs became disorganised. When conditions became normal in 1858, several schools were opened at the tahsils and district headquarters. The Britishers constructed many important roads and railways. It can be safely remarked that the story of railways began in the time of the Britishers. The construction of roads and railways influenced the economy of the region in positive direction. Besides, they constructed many canals and dams for irrigation which resulted in an increase in agricultural produce. They developed public utility services like schools, hospitals, water supply, etc., in the towns. They developed police lines, civil lines etc. in important centres. All these activities influenced the cultural landscape of the region.

(B) Post-British Period :

After 1947, the region got rid of the British rule. For the proper development of rural life, the steps that were already taken by the Britishers, were made more effective. The abolition of the zamindari system (1952) had brought about a significant changes in the social and economic life of the people of the region. The tenant landlord system ceased to exist. Bhumidhars and sirdars now form the bulk of the cultivators and they pay land revenue direct to

government. The landlords (who had generally exploited the peasantry and thrived on labours) and the tillers of the soil have been placed on an equal footing. The social system, which was based on semi-feudal traditions of reciprocity in which the zamindars acted as the guardians of the village community, has also disappeared. Improvement in the means of transport and communication has brought the cultivators nearer to the market thus giving him the opportunity of striking a better bargain for his produce. Co-ordinated plan of rural reconstruction has been under taken in which the Gaon Panchayats, Nyaya Panchayats, Block development committees and zila parishads are playing a singificant role in improving agricultural product, growth of population, industrialization and urbanisation, opening of educational institutions and medical services and construction of new roads under Five Year Plans have accelerated the pace of cultural development of the region.

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# CHAPTER III

## SETTLEMENT PATTERN

The study of settlements has significant place in the geographic literature. A settlement represents an organised dwellings of human beings together with the building in which they live or store various things and the tracks or streets over which their movement takes place[1]. It is a fixed form of cultural landscape in which, like any other cultural trait, changes take place through time and space due to changing social and economic structure of the society. Hence, they provide us the changing pattern of the inter-regional and intra-regional character of the cultural landscape. Size, shape, building pattern and other attributes of settlements show the adjustment of man with natural environment. Therefore the study of settlements is necessary for knowing the cultural development of the region.

### RURAL SETTLEMENTS :

#### Origin and Evolution :

The origin and evolution of settlement is a gradual process which passes through over hundreds of years and displays itself in the various forms of settlement growth. In view of the above, the study of the origin and evolution of rural settlements has been chronologically made into three heads as follows :

Pre-historic and Ancient Periods (600 B.C.-1200 A.D.) :

In prehistoric times, the region was largely covered with dense forests and was inhabited by primitive tribes[2]. The Paleolithic tools found in Lalitpur and Banda districts attest the 'hand axe' culture of those times in the region. Sankalia stressed that this part of land was the abode of stone-age men and tribal people untill the Chandela Rajput built the temples[3].

In the Rigvedic period, Bundelkhand was unknown to the Aryans[4], therefore it is difficult to trace out the Aryan settlements in this part of the country. The Aryans marched towards the eastern part of the north India from the north-west but they were unable to cross the Yamuna as well as dense forests. The Narmada river finds no mention in the Ramayan. This shows that the Aryans had not reached upto the Narmada in the Aryan period[5]. First of all, some Rishis (Saints), who were warriors also crossed the Yamuna and built their Ashrams at some places of the region. The Ashrams of saints like Atri, Sutikshan and Sarbhanga were in the south of the Yamuna. The Mahabharat describes the Kalinjar hill as the Ashram of Agastya Muni[6]. With the advent of Aryans, the original habitants were either driven away or reduced in numbers.

In the post-vedic period (8th century B.C.), a

Mahajanpadas called as 'Chedi' (modern Bundelkhand particularly Banda district) with its capital Shuktimati seems to have been colonized by an Aryan tribe named Chedi. The Avanti Mahajanpad (great empire) in the west of the region, corresponding to Malwa was certainly inhabited by the Aryans who had developed various settlements. During third century A.D. (by 240 A.D.) famous Haihayas and Chedi Kings who, after establishing themselves at Maheshwar (Indore), occupied the Kalinjar and ruled over the eastern part with its capital at Kalinjar[7]. They were known as Kalinjaradhishwara or lord of Kalinjar[8] as well as ruler of the Chedi-desh. It can be concluded that during this period, the region was under Chedi Kings. The Aryan villages were sparsely inhabited.

After the first half of the 7th century A.D., the region seems to have been occupied by Aboriginal Gonds[9] who had high degree of civilization. Rani, Sigurwara (Lalitpur district) are the villages which have ancient remains in the form of relics, rude walling and fortifications and temples that show the glory of that period. The numerous villages having the word 'Behat' as appelation, seem to have been founded by 'Gonds' because in their regional language the 'Behat' carries the meaning for village[10]. The Talbehat, Balbehat etc. have their origin in the Gond period.

The historical records reveal that the systematic colonization began from the Chandela period (800 A.D.). Actually, they were not only great conquerers but also good administrators. The remnants of great beautiful buildings and tanks indicate that there was peace and prosperity in the region. The water-point and fortress point settlements associate their origin with water scarcity and insecure conditions of the region respectively. During this period, the kingdom was divided into numerous republics[11]. The provinces were called Bhuktis (like modern commissionaries). The Bhuktis were divided in Pattals (Parganas). There were also group of villages i.e. Ashtadashak, Dwadashak and Panchala villages. The gram (village) was the lowest administrative unit which stood nearby a fort, temple or tank and beyond the wide expanse of the cultivated fields. The local administration of villages was carried on by the Gramikas who used to settle the disputes and other village affairs. The whole society was categorised on the basis of division of labour as Nigam (Businessman), Shreni (Artisian and Mechanics)[12] etc.

Medieval Period (1300 A.D. - 1700 A.D.) :

With the downfall of Chandela dynasty in the beginning of 13th century, Muslim rulers entered in the region. After the fall of the Chandelas, law and order disappeared from Bundelkhand region, never to come back untill the establishment

of the British rule. Several independent petty chiefs appeared on the scene and established themselves throughout the region[13]. Owing to political uncertainty, the above clans, who were warriors as well as vigorous people, were always trying to establish new settlements. Their political activities seem to have continued till they were supplanted by the British rulers in the beginning of 18th Century A.D. With the downfall of these clans, their empires more or less, were also gradually destroyed. In fact, the arrival of Muslim rulers to Bundelkhand started from the time when Prithvi Raj Chauhan was defeated by Mohammad Ghori in 1192 A.D. Unfortunately, the Muslim emperors had paid very little attention towards the development of rural settlements due to political and religious instability. The mughal rulers demolished either beautiful masonary works or converted them into the mosques and tombs. They not only tried to impose the islamic religion on the people but also changed the names of some Rajput villages. It is strange to note here that most of the muslim villages located in the interior areas, are originally Rajput villages. In fact they were converted to islamic faith. During mughal period, the reign of Akbar was much favourable for the evolution of settlements. The Territorial organisation of Akbar resulted into better development of rural settlements.

Modern Period : (1800 - ) :

The study of the origin and evolution of rural settlements during the modern period has been made under the following two sub periods :-

(i) British period (1800-1947)

(ii) Post-British period (After 1947).

(i) British Period :

With the advent of the British rule, introduction of of law and order created the environment of peace and prosperity and new rural settlements interspread over the region. The introduction of modern modes of transport and communication in forms of railways and roadways and canals in the improvement of agriculture contributed much to the growth of new rural settlements in the region. During this period, administration was properly organized and land settlement acts were passed. Parganas were maintained as unit for land revenue of settlements. Although Britishers exploited the regional rural economy unlike muslims, they provided peace and security and encouraged the growth of rural settlements.

(ii) Post-British Period :

Many steps, that were already taken by the British government, were made more effective by the government for the proper development of rural life after 1947 when India

got freedom from the British rule. For the balanced development of rural areas, government has started "The community development Programme" which is, of course, a huge effort towards the rural development. The socio-economic and cultural set-up of Indian rural settlements is changing in the form of the construction of modern buildings. In the development of scheduled caste and tribal settlements, development programme is playing a leading role. Several facilities were provided to the tribal people by the government regarding construction of buildings, wells and schools etc. During five year plans, a number of houses were constructed for the Kols in Banda district[14]. Besides, education, medical facilities and construction of new roads have also accelerated the evolution of rural settlements.

Population size Distribution :

The size of villages is decided bythe physio-cultural factors like relief, sources of water supply, drainage pattern, social characteristics, pattern of land-use, land tenure, transport accessibility social attributes, population density etc. The growth and distribution of population, which ultimately decide the size of villages, are governed by the water availability and quality of land. Kayastha remarks "The areas which have good quality of soil

and plenty of water, have numerous large settlements. In hills and slopy areas settlements are very few and small"[15].

The region has complex of physical environment which directly governs the size of villages. In the low land part, where productive agricultural land is available, large size villages may be observed. On the other hand, the majority of small villages is found in southern upland of the region which is not suitable for intensive agriculture due to rugged topography, inadequate irrigational facilities etc.

The population size of villages varies from place to place. It may be classified into following groups on the basis of population size -

(i) Villages with less than 200 persons )
) -small villages
(ii) Villages with 200-499 persons )

(iii) Villages with 500-999 persons )
) Medium size villages
(iv) Villages with 1000-1999 persons)

(v) Villages with 2000-4999 persons -Large villages

(vi) Villages with more than 5000 persons -Very large villages.

Above mentioned categories have been analysed in the following heads :-

(i) Small Villages :

The small villages are 2100 in number which constitute

46.21 percent of the total villages in the region (table 3.1). The highest percentage of such villages is recorded in Lalitpur (60.18), while the lowest percentage (41.82) is in Banda district. These types of villages are scattered all over the region.

Table 3.1 : Percentage of villages in the Class of Total inhabited villages.

| Districts | Total inhabited villages | 0-199 | 200-499 | 500-999 | 1000-1999 | 2000-4999 | 5000 & above |
|---|---|---|---|---|---|---|---|
| Jhansi | 967 | 12.28 | 32.72 | 30.63 | 19.16 | 4.82 | 0.39 |
| Lalitpur | 683 | 23.43 | 26.75 | 26.65 | 9.66 | 3.07 | 0.44 |
| Hamirpur | 930 | 16.56 | 22.04 | 27.42 | 24.52 | 8.18 | 1.18 |
| Jalaun | 957 | 17.55 | 32.60 | 28.21 | 15.67 | 5.65 | 0.42 |
| Banda | 1207 | 17.72 | 24.10 | 28.70 | 19.71 | 8.86 | 0.91 |
| Region | 4544 | 17.38 | 28.33 | 28.36 | 18.24 | 6.49 | 0.70 |

(ii) Medium Size Villages :

The total number of medium size villages is 2118 i.e. 46.60 percent of the total villages in the region. These are also common throughout the region. Their percentage is the highest in Hamirpur (51.94) and the lowest in Lalitpur district (36.31).

(iii) Large villages :

The total number of large villages is 294 which is 6.49% of the total inhabited villages in the region. The highest percentage is recorded by Banda district (8.86) followed byHamirpur (8.18) and Jalaun (5.65) districts. Generally these villages have rural markets which provide services to their tributary areas.

(iv) Very large size villages :

There are only 32 large villages. Most of them are market centres which are characterised with trade, transport, small scale industries, educational facilities. Hamirpur and Banda districts have equal number (11) of such villages. The lowest number is found in Jalaun district (4) which accounts only 0.41 percent of total villages of the district.

Spatial Analysis :

The spatial analysis of rural settlements carries much importance in the oretical consideration of distribution, which pertains to the locational arrangement of villages in a particular given space and it is, therefore, largely concerned with the areal dimension[16]. There are 5216 villages in the region (inhabited 4544 and unihabited 672). The observed mean inter-village spacing comes to 2.123 km which is less than the hypothetical distance of 2.575 km

observed under hexagonal system claculated on the basis of the following formula[17].

$$D = 1.0746 \sqrt{A/N}$$

Where -

D = The theoretical distance between points in hexagonal arrangement.

A = Area, and

N = The Number of settlements per Unit Area.

The theoretical distances have been given in table (3.2) and map (Fig. 3.1C) has been prepared to illustrate them. Further, for analysis, spacing values have been arranged into three categories as follows :-

(i) Low Spacing ( $<2$ Km )

(ii) Medium Spacing ( 2-2.6 km.)

(iii) High Spacing ( $>2.6$ Km.)

(i) Low Spacing ($<2$ Km.) :

Low spacing is observed in two tahsils of Jalaun district i.e. Jalaun with 1.89 km and Konch with 1.96 km. of spacing. They cover 8.026 percent of the total area and 11.09 percent of the total population of the region. The area per village in Jalaun and Konch tahsil is 3.03 $Km^2$ and 3.35 $Km^2$ respectively and the population pressure per village for Jalaun tahsil is 683.86 persons and for Konch

Table 3.2 : Spacing and Nature of Dispersion of Rural Settlements.

| Tahsils/ Region | Village Density | D | $\bar{r}_A$ | $\bar{r}_E$ | RN | V |
|---|---|---|---|---|---|---|
| Moth | 20.64 | 2.29 | 1.76 | 1.086 | 1.621 | 0.3252 |
| Garautha | 14.570 | 2.81 | 1.58 | 1.315 | 1.201 | 0.4553 |
| Mauranipur | 15.90 | 2.69 | 1.87 | 1.25 | 1.496 | 0.4269 |
| Jhansi | 14.91 | 2.98 | 2.00 | 1.282 | 1.549 | 0.4553 |
| Talbehat | 14.51 | 2.82 | 1.65 | 1.351 | 1.221 | 0.4553 |
| Lalitpur | 15.25 | 2.75 | 1.63 | 1.282 | 1.271 | 0.4553 |
| Mahrauni | 17.66 | 2.56 | 1.40 | 1.190 | 1.176 | 0.3795 |
| Hamirpur | 18.55 | 2.49 | 2.14 | 1.162 | 1.815 | 0.3795 |
| Rath | 16.17 | 2.67 | 2.16 | 1.25 | 1.728 | 0.4269 |
| Kulpahar | 25.04 | 2.15 | 1.70 | 1.00 | 1.70 | 0.2732 |
| Charkhari | 13.23 | 2.95 | 1.50 | 1.369 | 1.095 | 0.5254 |
| Maudaha | 13.26 | 2.95 | 2.12 | 1.369 | 1.548 | 0.5254 |
| Mahoba | 12.92 | 3.01 | 1.70 | 1.408 | 1.207 | 0.5254 |
| Jalaun | 32.90 | 1.89 | 1.18 | 0.873 | 1.351 | 0.2069 |
| Konch | 29.79 | 1.97 | 1.18 | 0.917 | 1.287 | 0.2276 |
| Orai | 15.96 | 2.69 | 1.63 | 1.25 | 1.359 | 0.4269 |
| Kalpi | 18.96 | 2.47 | 1.56 | 1.149 | 1.358 | 0.5254 |
| Banda | 12.82 | 3.00 | 1.92 | 1.351 | 1.399 | 0.4879 |
| Baberu | 13.70 | 2.90 | 1.87 | 1.351 | 1.399 | 0.4879 |
| Naraini | 20.91 | 2.35 | 1.60 | 1.094 | 1.462 | 0.3253 |
| Karwi | 16.78 | 2.62 | 1.62 | 1.224 | 1.323 | 0.4018 |
| Mau | 17.76 | 2.55 | 1.15 | 1.189 | 0.967 | 0.3795 |
| Region | 17.42 | 2.57 | 2.12 | 1.199 | 1.770 | 0.4018 |

N.B. For explanation of the symbols see the text.

tahsil is 582.83 persons (Appendix III & IV). The availability of water, fertility of soils and accessibility of transport lines are responsible factors for low spacing of villages in these areas.

(ii) Medium Spacing (2-2.6 Km) :

Medium spacing is noted in seven tahsils : Kulpahar, Moth, Naraini, Kalpi, Hamirpur, Mau and Mahrauni, which cover 28.24 percent of the total area and 30.49 percent of the total rural population of the region. Kulpahar tahsil records the lowest medium spacing of 2.14 Km. followed by Moth (2.29 Km.), Naraini(2.35), Kalpi (2.47), Hamirpur (2.49), Mau (2.55) and Mahrauni (2.56) tahsils. The area per village varies from 3.97 to 5.66 $Km^2$ and the population per village ranges from 679 to 849 persons, except in case of Naraini tahsil (999 persons).

(III) High Spacing ( >2.6 Km.) :

High spacing is found in remaining 13th tahsils which together comprise 63.74 percent of the total area as well as 58.42 percent of total rural population of the region. Spacing values varies from 2.623 to 3.00 Km. The highest spacing is recorded by the Banda tahsil (3.00) while the lowest spacing is in Karwi Tahsil (2.62). The population per village ranges from 797 to 1537 persons. Lalitpur and Charkhari tahsils are the exceptions which

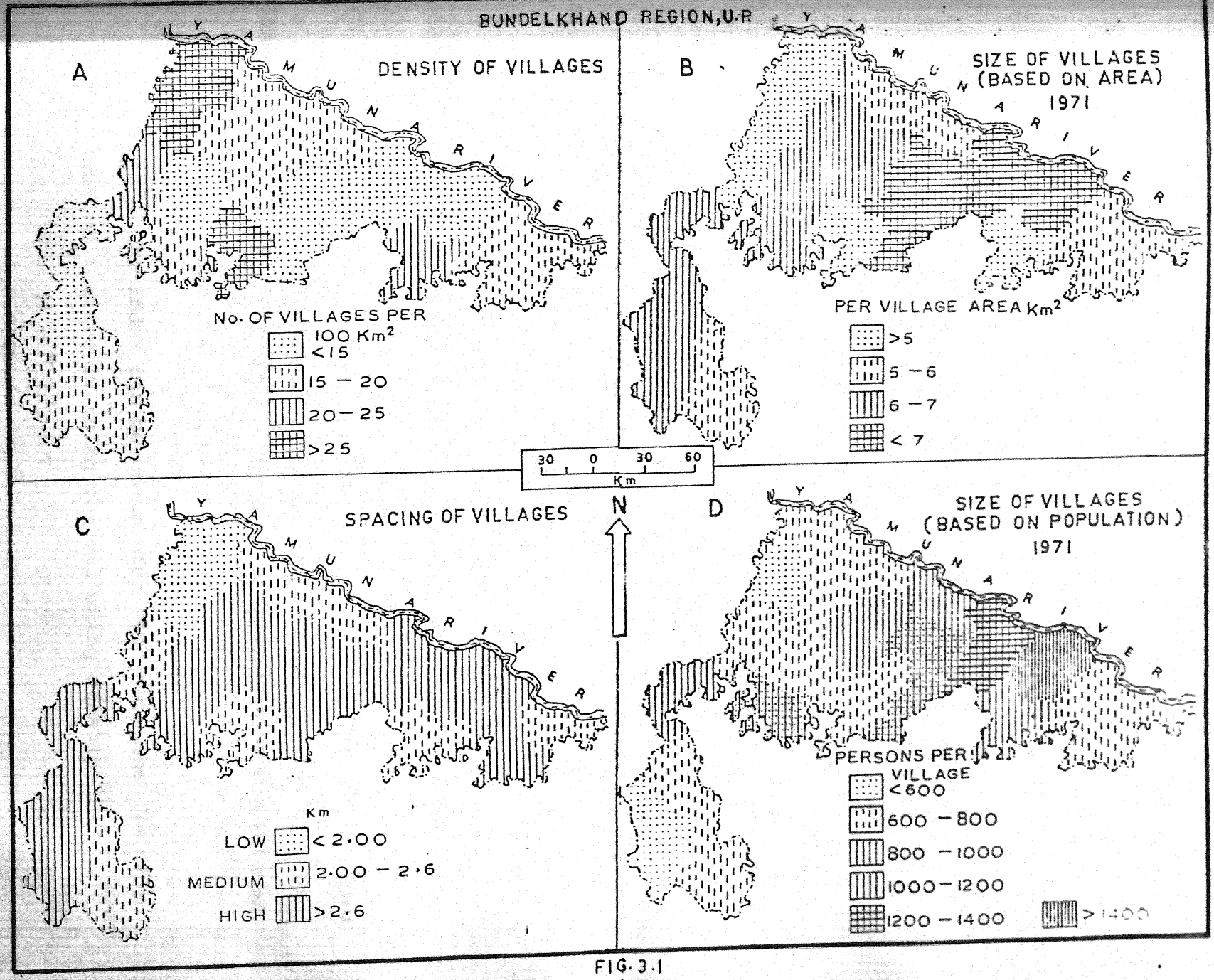
BUNDELKHAND REGION, U.P.
A
DENSITY OF VILLAGES
No. OF VILLAGES PER 100 Km²
<15
15 – 20
20 – 25
>25
B
SIZE OF VILLAGES (BASED ON AREA) 1971
PER VILLAGE AREA Km²
>5
5 – 6
6 – 7
< 7
30 0 30 60
Km
N
C
SPACING OF VILLAGES
Km
LOW <2.00
MEDIUM 2.00 – 2.6
HIGH >2.6
D
SIZE OF VILLAGES (BASED ON POPULATION) 1971
PERSONS PER VILLAGE
<600
600 – 800
800 – 1000
1000 – 1200
1200 – 1400
>1400

FIG. 3.1

be calculated by R/N, where 'R' stands for the total number of nearest neighbour distances, 'N' stands for the total number of settlements. For further analysis, expected mean distances ($\bar{r}E$) in a random pattern can be calculated by the formula -

$$\bar{r}E = \frac{1}{2}\sqrt{d}$$

Where 'd' is the density of village in an unit area.

The ratio of the observed mean distance to expected mean distances designated as Rn value shows the departure from randomness[21]. It has been calculated by using the following formula -

$$Rn = \frac{\bar{r}a}{\bar{r}E}$$

Rn values always range from 0.0 to 2.1491. If Rn value is Zero it represents maximum clustering; where 'Rn' value is equal to one, the distribution is termed as perfect random and when 'Rn' value is 1 to 2.149, it shows complete uniform distributional pattern. In the case of the region, Rn values (Table 3.2) reveal that there is no case of randomness or clustering.

The index can be co-related with variance (V) for further testing by using the following equation[22]-

$$V = (4 - \pi)/3\ d\pi$$
$$= 0.0683086/d$$

when the 'V' is greater than the $\bar{r}E$, the distribution is termed clustering, when $\bar{r}E$ value is larger than the 'V' the distribution is termed regular and when the values of 'V' and $\bar{r}E$ are equal, the distribution is termed as random. In the present case, the values of 'V' are always less than $\bar{r}E$. Thus representing more regular than random pattern.

With the help of computed 'RN' values the study region has been divided into the following three categories (Fig. 3.2) :-

(i) Low Regularity ($<1.20$ ):

Three tahsils Mau (Rn 0.967), Charkhari (1.095) and Mahrauni (1.76), covering an area of 11.89 percent of the region, come under this category. The observed inter-village distance is 1.15 km., while the density of villages (per 100 $Km^2$) is 13.23, 17.66, and 17.76 villages for Charkhari, Mahrauni and Mau tahsils respectively. There is one thing to strike that Mau is the only tahsil in the whole region which records the lowest Rn value (0.96) representing random pattern.

(ii) Medium Regularity (1.20 - 1.40) :

Medium regularity is found in eleven tahsils i.e. Garautha (1.21) Mahoba (1.21), Talbehat (1.22), Lalitpur (1.271), Konch (1.281), Karwi (1.32), Jalaun (1.35), Orai

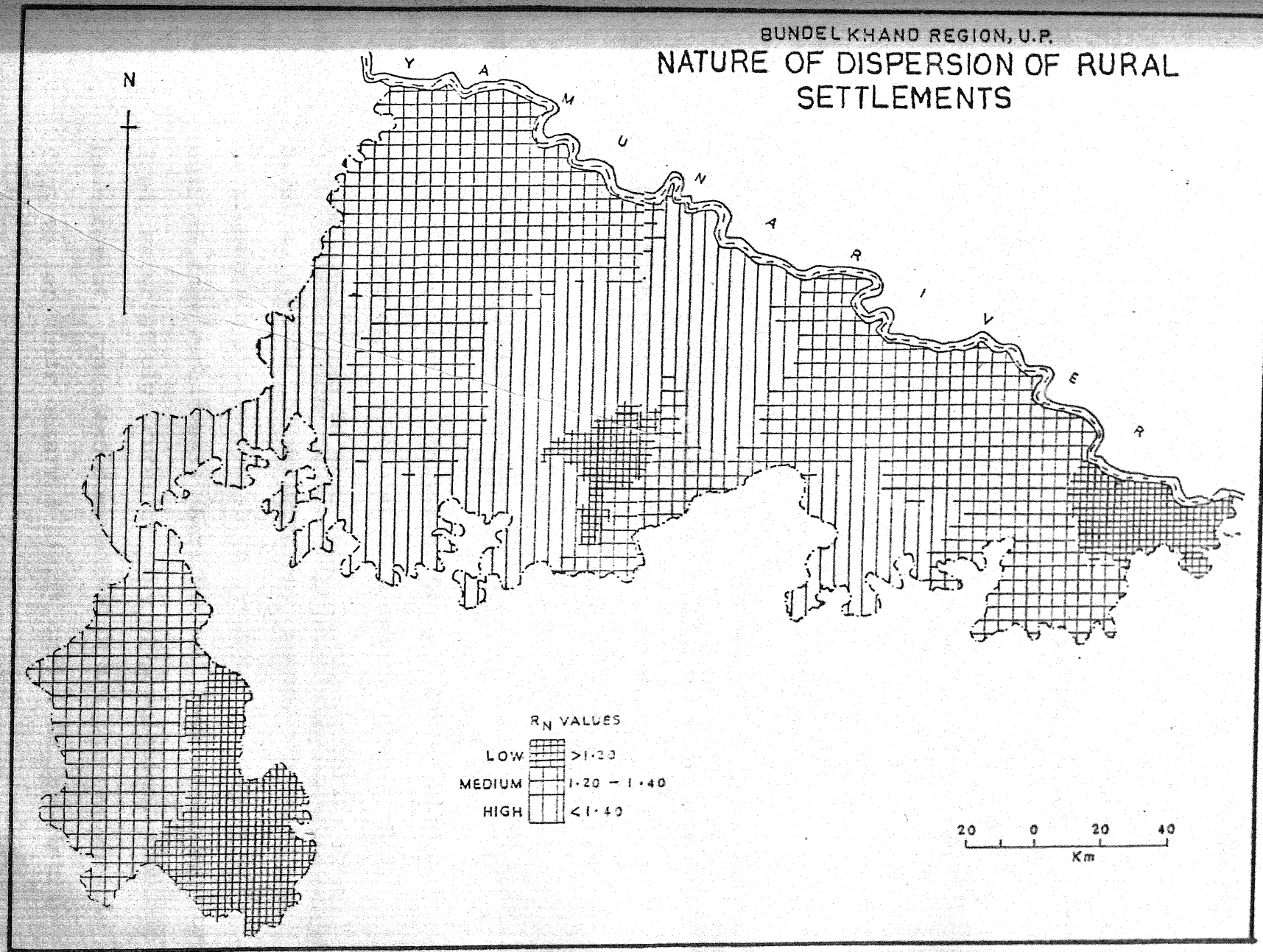
BUNDELKHAND REGION, U.P.
NATURE OF DISPERSION OF RURAL SETTLEMENTS
N
YAMUNA RIVER
$R_N$ VALUES
LOW >1·20
MEDIUM 1·20 – 1·40
HIGH <1·40
20 0 20 40
Km

FIG. 3.2

(1.36), Kalpi (1.36), Banda (1.383) and Baberu (1.384) where 'Rn' values range from 1.21 to 1.384. These Tahsils cover 57.06% of total area of the region. The inter-village observed spacing for Garautha is 1.58 Km., Mahoba 1.70, Talbehat 1.65, Lalitpur 1.63, Konch 1.18, Karwi 1.62, Jalaun 1.18, Kalpi 1.56, Banda 1.87, and Baberu 1.92 km. The density of villages ranges from 12.82 to 32.90 villages.

(iii) <u>High Regularity (>1.40 Rn)</u> :

The remaining eight tahsils occupying 31.05% of area and 37.13% of the total rural population, fall under this category. The highest (1.84) Rn value is recorded in Hamirpur tahsil. Observed spacing values differ from 1.60 to 2.16 km and the density of villages from 13.26 to 25.04.

The distributional pattern of rural settlements in this region shows a greater tendency towards uniform. There is no case of complete randomness because 'Rn' values never stand to Zero (0). It always varies from 0.967 to 1.84 in the whole region. Hence, the rural settlements distribution shows tendency of Regular or uniform from randomness. Agricultural land area, forested land, water supply, rural density of population, economic development, roads and communication are the responsible factors for their observed discrepancies in the distri-

butional pattern of rural settlements in the region.

Types of Settlements :

The nature and types of settlements are the outcome of physio-cultural factors prevailing in a region. The undulating topography in the south and fertile plain land in the north have influenced too much the types of rural settlements in the region. Besides these, the historical imprints of the past have also an effective role in the growing of villages. Thus the rural settlement types of the region are the result of inter-play of physio-cultural and historical developments. Various techniques have been used for classifying human settlements in accordance with Size, siting, functions and time. Here, on the basis of different indices of local and regional scale described earlier, the rural settlements have been identified as follows :-

Compact Settlements :

The compact settlements are mainly confined to the north-west, central as well as eastern parts of the region. Agglomerated villages are distributed in patches along the Yamuna, the Betwa, the Dhasan rivers and northern alluvial low land. The compactness is the result of combined effects of various centripetal forces in which

fertility of soil, availability of water, need of defence, suitability of site, land tenure, social relationship, religion and superstition etc., play their dominant role. As the pressure of population increases, people want to get themselves settled on fertile land and thus agglomeration takes place. Besides, the compact settlements are also associated with numerous sites of the region as tank, lake, river bank etc.

These settlements have a connection with each other by Kachcha, Pucca fair weather roads, broad bullock-cart tracks and foot-paths. Such settlements are found in Jhansi and Hamirpur districts and also in Banda district in patches. Some patches are also seen in other parts of the region.

Semi-Compact Settlements :

The semi-compact settlements are the outcome of the inter-play of both centripetal and centrifugal forces. That is why, the imprints of both settlement types viz compact and dispersed are always visible in the villages of this category. It differs from the compact settlements due to the existence of a new separate hamlets apart from the main site of the village. Ahamad remarks that it has few separate hamlets generally one or two in main 'Mauza' apart from the compact site[23]. These settlements represent

an outgrowth from the central nucleus due to the increasing pressure of population or the settlements of later immigrants who came to earn their livelihood by working on the fields of landlords or rich people of the society.

So far as the distribution is concerned, the creation of separate hamlets from the main site can be seen throughout the study region. But these are mainly found in south-western part and eastern part of the region. In the southern upland, the tendency of separation is found due to the scarcity of water and less fertile soil which has very low supporting capacity, whereas in the north-west and central part of the region, introduction of canals and other facilities of communication are responsible for segregation of dwellings. The tendency of segregation is most popular among the low caste people who have their own community hamlets to live near some large compact villages of upper castes. These hamlets are associated with main villages with their social, economic and cultural activities.

Dispersed Settlements :

Dispersed Settlements are more often associated with undulating surface. In the areas of such settlements, houses are scattered among the fields or grouped into hamlets. On the basis of their socio-economic structure

these may be recognised into two sub-types :

(i) Hamletted Settlements.

(ii) Homestead Settlements.

(i) Hamletted Settlements :

They are characterised by the presence of small hamlets spread over the entire Mauza in which it is troublesome task to trace out the main site of the village. All these scattered hamlets are considered as a single unit for the purpose of revenue and administration. The number of hamlets are from five or six to ten or more. Singh observes that the number of detached hamlets in each inhabited 'Mauza' may vary from five to thirty. The site and nature of the hamlets are governed by one physical element as river meander, an embankment and a small piece of agrarian land. The inhabitants of these hamlets are oriented to one economic function such as agrarian practices, forest working, cattle pasturing, mining, quarrying etc. These settlements are mainly found in Baberu, Karwi and Naraini tahsils of Banda district. However, the tendency of dis-person can be seen in other part of the region also.

(ii) Homestead Settlements :

Such type of rural settlements is marked by the presence of complete diffusion of homesteads over the entire

village area and relatively long distance between the dwellings[24]. The main characteristic of this settlement is its minute size. Even the houses stand separate from each other. In broad sense, every thing spells isolation and privacy[25]. Such isolated living tends to separate the persons, psychologically as well as economically. The distribution of these settlements is mainly controlled by the rugged topography and poor resources of livelihood. These settlements are mainly confined in the southern part of the region.

Place Names Associated with Rural Settlements :

The analysis of place names carries much importance because it provides significant clues in investigating the impact of physical and cultural factors on the nomenclature of cultural features. The nomenclature of the settlements varies from area to area according to environmental conditions of the past and present. A knowledge of regional language helps in finding out the environmental impact on place names. The origin of the names and histogenesis of settlements can be apprehended by the diagnosis of prefix and suffix[26] of place names. Different place names of the villages of the study region in the context of suffixes and prefixes and their association are shown in Table 3.3 and are broadly classified into two groups :

Table 3.3 : No. of Occurrences of some Prefixes and Suffixes in Place Names of Rural Settlements.

| Tahsils | Pur | Pura | Kalan | Buzurg | Khurd | Gaon | Aila Aula etc. | Kheria Khera | Maufi | Chak | Mau | Ganj | Garh | Deora, Deori etc. | Khas |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Moth | 8 | 26 | 7 | 6 | 8 | 1 | 4 | 1 | 1 | 2 | .. | 1 | 4 | 1 | 1 |
| Garautha | 1 | 28 | .. | 6 | 8 | 2 | 3 | 3 | .. | 4 | .. | .. | 2 | 4 | 2 |
| Mauranipur | 4 | 17 | .. | 4 | 4 | .. | .. | .. | .. | 1 | .. | .. | 2 | 2 | .. |
| Jhansi | 6 | 10 | 1 | 6 | 7 | 1 | 7 | 7 | 2 | .. | 1 | .. | 2 | .. | 1 |
| Talbehat | 6 | 8 | 6 | .. | 5 | 3 | 4 | 4 | .. | .. | 1 | .. | .. | 2 | 3 |
| Lalitpur | 12 | 15 | 10 | .. | 8 | .. | 6 | 9 | 1 | .. | 1 | .. | 1 | 1 | 6 |
| Mahrauni | 16 | 6 | 6 | 2 | 5 | 8 | 4 | 6 | 1 | -- | -- | .. | .. | 3 | 5 |
| Hamirpur | 23 | 4 | 1 | 7 | 8 | 2 | 17 | .. | .. | .. | .. | 2 | .. | .. | .. |
| Rath | 5 | 10 | 2 | 3 | 3 | 1 | 10 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | .. |
| Kulpahar | 4 | 14 | 3 | 4 | 5 | 1 | 8 | 4 | 1 | 1 | .. | 1 | .. | .. | .. |
| Charkhari | 4 | 10 | 3 | 1 | 3 | 2 | 7 | 5 | 1 | .. | 1 | 2 | .. | .. | .. |
| Maudaha | 10 | .. | 3 | 2 | 6 | 3 | 14 | 2 | 1 | 3 | 1 | .. | .. | .. | .. |
| Mahoba | 6 | 13 | 8 | 2 | 8 | 1 | 7 | 2 | 7 | 1 | 1 | 2 | .. | .. | .. |
| Jalaun | 70 | 54 | 1 | 4 | 8 | 4 | 26 | 1 | .. | 2 | 2 | .. | 11 | 19 | 2 |
| Konch | 9 | 63 | 5 | 6 | 11 | 3 | 24 | 1 | .. | 1 | 1 | .. | 8 | .. | .. |
| Orai | 8 | 13 | 4 | 3 | 4 | 6 | 7 | 2 | .. | 2 | .. | .. | .. | .. | .. |
| Kalpi | 43 | 4 | 3 | 1 | 5 | 5 | 8 | 3 | .. | 3 | .. | .. | 2 | 20 | .. |
| Banda | 14 | 6 | 5 | .. | 5 | 1 | 19 | 1 | 1 | 2 | .. | .. | .. | .. | 1 |
| Baberu | 14 | .. | 1 | 1 | 4 | 2 | 29 | 1 | 2 | 1 | 1 | 1 | .. | .. | .. |
| Naraini | 52 | 3 | 5 | 4 | 8 | 2 | 8 | 4 | 5 | 10 | .. | .. | .. | .. | .. |
| Karwi | 41 | 4 | 2 | 11 | 5 | 2 | 19 | 3 | 27 | 10 | .. | 1 | 2 | 2 | 1 |
| Mau | 6 | .. | 8 | .. | 9 | 1 | 5 | .. | 9 | 5 | 1 | .. | .. | 1 | .. |

Source: Complied from the District Census Handbooks, 1971.

(1) Place names associated with physical environment

(2) Place names associated with cultural environment

(1) Place Names Associated with Physical Environment :

There are numerous examples of place names which are directly associated with natural features like forest, river, tank, mountain, tree or the character of land. On the basis of these physical elements classification of place names has been made and is discussed below :

(i) Place Names Associated with Forests :

The place names Banni, Itwan, Dhungwan, Rewan (Maudaha tahsil), Bhatgawan (Mau) show the existence of forest in the vicinity of the villages. Some forest areas were purposively cleared and after burning and clearning of the forests, some villages were established such as Bankat (Karwi tahsil), Kaitha, Kaithi (Rath tahsil), Nimbuari, Satawara, Immilia (Charkhari tahsil) Immiliha and Nibi (Mau tahsil).

(ii) Place Names Associated with Animals :

There are village names like Richha, Richhara (Charkhari tahsil), Baghelabari, Baghwara (Karwi tahsil), Bagharkha, Gidhraj, Neoria (Maudaha tahsil) Baghaila, Singhpur (Mau tahsil) etc. which suggest that wild animals were found in the region. These villages are very compact

as well as old.

(iii) Place Names Associated with Soils :

The apithets such as Pahari, Dih, Koh (Suirts of the hills), Char (Grass-land having low relief), Daha (Water effected areas) are somewhere added as suffixes of village names. The name of any village ending with 'Char' indicates that the village has low land area suitable for pastures in its vicinity. Charkhariya, Charuwa (Charkhari tahsil), Charehra (Mau), Chamsauni (Kalpi) Char (Karwi) may be cited as examples. The names of villages ending with 'Pahari' or 'Pahar' indicate the situation of settlements near hillocks such as Phari Buzurg (Karwi), Pahari Bhitari (Maudaha Tahsil), Pahari Bir (Mauranipur) etc. Such way Nunar, Dewari (Karwi), Kataiya Khadar (Mau), Jamarahi Uparhar, Shantar Purganon Dewar, Mohai Deowar, Sipura Dewara settlements show the characteristics of land.

(iv) Place Names Associated with Water Bodies :

Place names associated with water bodies contain suffixes such as Tal, Pokhar, Dariya, Kund, Kuinya etc. In fact Rajput and Muslim rules constructed many tanks, ponds as their memory. Hence many settlements are named after their memorial works such as Talbehat (Lalitpur) Bandha (Karwi), Bandheli (Rath), Bhilwa Dariya, Konta Dariya (Harmirpur) etc.

2. Place Names Associated with Cultural Environment :

Similar to physical features, the cultural features have also greatly influenced the nomenclature of the rural settlements. Their explanation is made in the following heads :-

(i) Place Names Associated with Genetic Elements :

There are numerous place names based on population size, such as, those ending with Kalan, Khurd, Khas, Pur or Pura, Purwa.

Kalan or Khurd both designate large and small villages respectively. In the study region, Kalan or Khurd villages may be noticed in a great majority. Khajuriha Kalan, Khajuriha Khurd, Mawai Kalan, Mawai Khurd (Mau Tahsil), Pachipur Kalan, Pachipur Khurd, Baroda Kalan, Baroda Khurd (Konch Tahsil), Jaisari Kalan, Jaisari Khurd (Orai Tahsil), Chandi Kalan, Sirsai Kalan (Maudaha tahsil), Bamhauri Kalan (Charkhari tahsil)may be taken as examples.

The suffix 'Buzurg' also denotes the same meaning as 'Kalan' or Khas. Most of the large villages were founded during 1400-1800 A.D. when people thought well to live in compact and big villages due to fear of outer invasion and wild animals. Khyriya Buzurg, Barenda Buzurg (Charkhari), Badokhar Buzurg (Banda), Bakta Buzurg (Karwi), Dataura

Buzurg, Sarauli Buzurg (Hamirpur) etc. are the examples.

The suffixes Purwa, Pura or Pur signify the size as well as age of villages. The Pura or Purwa denotes small size and the origin in early period, whereas 'Pur' signifies the large size and the origin in old period rather than Pura or Purwa. The villages with suffixes of 'Purwa' or 'Pur' are numerous in the region. Sonepura, Hamirpura, Sultanpur, Hanumanpura (Jalaun), Arjunpura, Alampura, Champatpura, Dadpura, Gobardhanpura (Konch) are the examples of small villages whereas Mohammadpur, Rasulpur, Hamirpur (Jalaun), Lachmanpur, Saligpur, Mirzapur, Matipur (Karwi), Lodhipur, Fatehpur, Keshawpur (Maudaha) may be cited as larger villages in the region.

The suffix 'Khera' suggests those villages which had been once destroyed and again inhabited. Such types of villages are Amarkhera (Moth), Kathkhera (Jhansi), Kana Khera (Banda), Kullu Kher (Lalitpur), Barkhera and Barkheriya (Lalitpur) etc.

The suffix 'Garh' indicates towares the artificial security tactices in medieval period. The villages associated with 'Garh' are Pachheragarh, Lahagarh (Moth), Ummargarh (Jalaun), Garhwai, Gurha (Garautha), Gargighat, Garhi Kalan, Garhi Khurd, Garhchapa (Karwi) etc.

(ii) Place Names Associated with Grants :

Various types of grants were provided by the Chief rulers as well as zamindars in ancient times for their glorious names. The villages which are inhabited on the land provided as a grant are known by different suffixes as Maufi, Nizamat, Inamat etc. Such types of villages are Hadha Maufi, Pahari Maufi, Dhawrahi Maufi (Naraini tahsil), Kharka Maufi (Mauranipur), Kharauli Maufi, Narharpur Maufi (Naraini), Mainhai Maufi, Chilla Maufi, Paikaura Maufi, Panauti Maufi, Bhujauli Maufi (Karwi), Tola Maufi (Maudaha), Swesa Maufi (Charkhari) etc.

(iii) Place Names Associated with Communities :

Some villages have also been named after the name of founding communities or founder chiefs. A.B. Mukherjee remarked "These place names are an organic phenomena gradually involving and changing into new shapes according to the changing socio-economic environment of different periods of history[27]... Chamarsena, Chamari, Koripura, Lodhipura (Jalaun), Pandepur (Konch), Bahmapur, Mishirpur (Hamirpur), Kaharpur (Konch) and Sultanpura, Hirapura, Hasanpura, Hazipura and Mohammadpura (Jalaun) settlements may be taken as examples.

(iv) Place names Associated with Religion :

The change of Religion in the region also influenced

the nomenclature of villages. During the Post-Buddha period settlements were named after the Gods' of Hindu as Maheshpur (Konch), Hanumantpur, Keshwapur, Gopalpura (Jalaun), Sitapur, Ramayapur, Rampuriya, Sitapur, Lakshmanpur (Karwi) but when the muslims ruled over the region, they changed the names of villages. Their impact may noticed clearly in the villages like Mohammadpura, Sekhpur, Sultanpur, Ismailpura (Jalaun) etc.

(v) Place Names Associated with Local Diety :

Nomenclature of some villages is based on local 'God' or 'Goddess' in the region. Bhavanipur, Bhawanipurwa, Gaura (Banda), Hanumanpur, Harishankarpur (Jalaun), Ganeshpur (Konch) may be taken as examples.

(vi) Place Names Associated with the Designation of Marathas :

The village names associated with the suffixes Auli, Aula, Aura, Aulia indicate the origin of villages in 18th century when Marathas entered into the region. Bhujauli, Kalwalia, Dilaura (Karwi) Sightauli, Ghillauli (Jalaun), Bhagaura, Mandaura, Bandholi (Garautha), Rasauli, Randi Bhusauli, Rupauli (Mau) may be cited as examples. The table (3.3) shows that the suffixes Pura, Purwa or Pur, Kalan, Khurd and Buzurg are widely distributed all over the region. The number of nomenclature with Pur or Pura is much in the region. The suffixes Aila, Aulia, Auli, Aura

are also frequent in whole part of the region. The suffix 'Maufi' is noticed mostly in eastern part of the region and the abundance of Deora, Dih is in south-west part of the region.

URBAN SETTLEMENTS :

Origin and Evolution :

(i) Prehistoric and Ancient Periods :

In these times religious points gave birth to urban centres. Lord Ram came to Chitrakut Dham via 'Bhardwaj Ashram' (Allahabad city) and lived for some times. The celebrated hill of Kalinjar finds mention as the Ashram of 'Agastya Muni' in Mahabharat. Later on, these types of centres became the nuclei of urban growth. After the Mahabharat times, no authentic information is available for a long time. Ahmad has rightly remarked, "What the character and distribution of towns was before the establishment of the Kingdom of Magadh in the 7th century B.C., we have little or no authentic information[28].

The region remained under Gupta dynasty from the 3rd to 5th century A.D. when region left the first urban wave. Gupta age heralded a new epoch in the history of Bundelkhand. The temples of Deogarh are the most representative and well known examples of Nagar style[29]. It was perhaps the headquarters of a prince named Govind Gupta. Later on in

the 9th century a fort was erected here by Pratihar Rajput and it became the headquarter of a province. Now it is merely a village.

The Chandel period was the milestone of city culture. Chandel Rajputs founded many towns, constructed many temples, forts and big tanks at several places. Later on, these constructions became the nuclei of towns. Chandraverma was the builder of three former cities of defence (Kalinjar), of religious (Khajuraho) and of civil (Mahoba) in the beginning of 9th century. The fort of Khajuraho (M.P.) is now in ruined conditions. It is still the largest and finest collection of beautiful temples which have secured a paramount place in sculptural scene of India and abroad.

Besides the above towns, other towns were also noticed which were built up in this region under the Chandela regime. Fifth ruler of the Chandel dynasty, a Rajput King, Rohila (890-910 A.D.) founded two towns whose ruins are found at present[30]. He founded a town named Rasken (near Badausa in Banda district) whose present name is Rasin. It was a place of Sanskrit learning in those days and was called second 'Kashi'. The town was decorated with temples and tanks. The other town was Rohila Nagar' near Mahoba in Hamirpur district. At present both urban centres have lost their glorious times. Dudhi town was founded by 'Devalapati' the grandson of Yashovarman in 10th century. Madanpur, now a small market centre, was established as a

town by Madan Varman, a famous Chandel ruler. Hamirpur town had its origin in the 11th century by a Kalchuri Rajput Hamir Deva who built a fort here and developed it as a town.

In this period, the evolution of urban settlements was directly attached with the seat of royal families who had invited various types of traders, craftsmen and serving classes. Cultural institutions, water bodies and strategic sites were important attractive factors for the growth of urban settlements from the ancient to medieval periods[31]. The region has felt the real impact of urban evolution in the Chandel period which ended in the first decade of the 13th century.

(ii) Medieval Period :

In the medieval period, the region felt a new change which greatly influenced the mode of urban evolution. Defence and security played a great part in shaping out the towns. This resulted in the strengthening of the pre-existing forts and the construction of new forts and new centres. Hindu temples, existing in the towns, were converted into mosques. The Muslims tended to settle in separate Mohallas. That is why the segration of the Hindus and Muslims Mohallas are the common characteristics in most of Indian cities[32]. In the siting of towns, the political and religious factors which were effective in the ancient

period continued in this period also. Some Muslim emperors like Akbar and Shershah developed trade facilities in towns, constructed 'Sarain' and shelter places and the highways connecting them. Some handicrafts were also developed in the medieval period. Of these, the weaving and dyeing of cloths were important. All these cultural factors stimulated the process of urban evolution. In the 13th century 'Erich' was a town of great importance and a centre of learning. It was devastated by the Bundelas towards the end of the 17th century. Maudaha was founded in the Muslim period. It remained always a seat of local authority. Rath town was also developed during this period. Although its name has been derived from 'Rathor' a clan of Rajputs, it was rebuilt by Sharaf-ud-din about 1210 A.D. At that time it was named as 'Sharafatbad'. During the Muslim period, Akbar reign was much favourable for the evolution of towns. Ahmad has remarked, "The growth or revival of towns during Akbar reign was probably at the maximum, never surpassed untill the establishment of the British rule[33]. Rajapur became an important commercial centre in Banda district. Kalpi also rose to great commercial importance during this period. The remnants of Muslim tombs, Makbaras and other buildings tell us about glory.

Maratha kings also played a significant role in urban

evolution.Ranipur town was founded in 1678 by Rani Hera Deva, the widow of Raja Orchha. The Jhansi city which was merely a small village called 'Balwantnagar' till 1742, ows its origin to the fort constructed by a Bundela King, Bir Singh Deva of Orchha at Bangra hill. Later on it was developed as a town byMarathas. Karwi (a town of Banda district) ows its development to the Marathas who first settled here and forced a large number of people to settle here. The town 'Banda' which was a small village in the Mughal period, was developed by Bundela King named 'Guman Singh'. The credit for the development of Lalitpur and and Mauranipur also goes to the Bundela Kings. The towns of Charkhari, Gursarai and Samthar were the headquarters of estates. Therefore, trade and commerce developed under the superivison of Royal dynasties and thus these towns gained the urban character.

From the above discussion, it is clear that the considerable changes took place in urban character in Akbar's reign, Maratha and Bundelas times. However, this period was not much favourable for the development of towns, new urban settlements were created in a very small number. This was mainly because of the negligence of agriculture which created famine and scarcity of food before the people.

(iii) Modern Period :

The factors affecting the development of towns in the modern period, have been considered into two heads :-

A - Pre-Independence period

B - Post-Independence period

A. Pre-Independence Period :

The political,economic and social changes that were introduced in the region during the British period, unleashed the new forces of urbanization. The establishment of encamping grounds and cantonments as well as administrative headquarters, the expansion of public utility services and transport network, opening of markets and the application of municipal acts to the towns are the responsibile factors for the unprecedented urban development during the British period. Karwi (Chitrakut Dham) attained more importance in the British period. Prior to the construction of metalled road that passes via Karwi and crosses the river Paisuni, a site for the encamping ground was selected by the Britishers at crossing of the river and road. This stimulated the growth of Karwi town. Likewise, many important places such as Jhansi Banda, Rath, Hamirpur, Moth, Chirgaon, Ranipur, Kalpi etc., situated on main routes, were selected as encamping grounds and the same process of expansion was repeated.

Banda rose enormously in importance when it became the headquarters of Bundelkhand (U.P.). Under the British period, Orai town which is now the third largest town of the region, grew as a prominent place only due to its administrative character. The period between 1867 to 1872 was most important for the towns. Most of the towns were declared as municipal board, town area and notified area according to their status in the region. With the declaration of settlements as municipal areas, the Britishers paid great attention towards the extension of public utility services in the towns.

Thus the advent of the British rule created a new environment in the towns of region. Jhansi, Banda, Orai, Lalitpur, Mahoba, Kalpi, Konch and Maudaha that were cock-pit of battles in the ancient and medieval periods, gained real urban impetus in the British period. When India became free from the British rule, new development policies under five year plans were formulated for the proper development of the region with the result, urban settlements have experienced rapid growth.

B. Post-Independence Period :

The twentieth century technology has revolutionised the urban development in the region. Agricultural production, urban trade and commerce are increasing side by side. All the towns of the region are experiencing the outward

expansion. In mumford's words, the twentieth century technology permitted the removal of limits[34]. With the increase of trade and commerce, new towns are emerging in the region. Manikpur, Hansari (near Jhansi), Kurara (Hamirpur), Matondh, Baberu, Orai (Banda) Nadigaon, Kotra (Jalaun) are the examples of it.

The establishment of academic institutions and hospitals have added a new area to the towns like Atarra, Banda, Chitrakut, Jhansi, Orai, Mahoba etc. Ribbon development along main transport routes in all the towns is noticeable specially in Chitrakut Dham, Atarra, Rath, Mahoba, Orai, Konch, Jalaun, Chirgaon, Jhansi and Mauranipur. Town and country planning department of Bundelkhand region has prepared the integrated urban development programmes of Jhansi, Chitrakut Dham, Banda, Orai, Lalitpur and has submitted them to the government to take action for their development. The plans for the development of other towns are also to be submitted.

Although the region witnessed the first glimpse of urban development in the ancient period. It touched the real horizon of urbanisation in the British period. After Independence, the government is trying to develop the towns in a planned way.

Temporal variation in Number of Towns :

The region has witnessed a slight fluctuation in the

number of towns during the period 1901-1971 but in 1981, the number increased enormously (table 3.4).

Table 3.4 : Temporal Variation in Number of Towns.

| Census year | Number of Towns |
|---|---|
| 1901 | 29 |
| 1911 | 29 |
| 1921 | 31 |
| 1931 | 29 |
| 1941 | 28 |
| 1951 | 35 |
| 1961 | 20 |
| 1971 | 24 |
| 1981 | 49 |

Total number of towns was 29 in the census of 1901. Kalinjar in Banda district and Kotra in Jalaun district were desclassified in 1911 but the emergence of two towns Garhiapathak and Ranipur in Jhansi district made the number of towns unchanged in next census year. Atarra and Naraini in Banda district gained the urban status in 1921. With the result, the number of towns rose to 31 in 1921 from 29 in 1911. Kulpahar and Jaitpur were desclassified in the next census. Hence the number of towns again fell to 29 in 1931. Garhiapathak town was merged with Jhansi in

1941, therefore, the number of towns fell to 28 in this census year. In 1951, many large villages of urban character emerged as towns. Kulpahar in Hamirpur district appeared again in the status of a town. Four towns Rampura, Umri, Jagamanpur and Kadaura in Jalaun district, Irich and Babina cantonment in Jhansi district emerged as towns in 1951, therefore, the number of towns rose to 35 in 1951 from 28 in 1941. The census of 1961 presented a new definition of urban areas which was rather strict than that of previous census. Consequently many settlements classified as urban in 1951, could not stand in the same position in 1961. Atarra and Naraini in Banda district; Irich, Talbehat, Baruasagar, Mahroni and Moth in Jhansi district, Maudaha, Sumerpur and Kulpahar in Hamirpur district could not stand as towns, with the result, the number of towns decreased to 20 in 1961 from 35 in 1951. The same definition of urban areas remained effective in 1971. Talbehat and Hansarigird in Jhansi district, Atarra in Banda district and Maudaha in Hamirpur district emerged as towns in the urban map of the region. The number of towns rose to 24 in 1971 from 20 in 1961. In 1981 many large villages of urban character emerged as towns. Nadigaon and Kotra in Jalaun district, Pali in Lalitpur district, Kurara, Sarila, Gohand, Kharela, Kabrai in Hamirpur district, Tondi Fatehpur, Kathera, Baragaon

in Jhansi district Baberu, Oran and Bisanda Buzurg in Banda district and others are the examples. Therefore, the numbers of towns rose to 49 in 1981 from 24 in 1971.

Chronological Class Variation :

Variation in size-class of all the settlements, classified as urban between 1901-1981 reveals the fluctuations in number of towns of different size-class in the region (Table 3.5).

Table 3.5 : Number of Towns in Different size-classes (1901-81)

| Size-class | 1901 | 1911 | 1921 | 1931 | 1941 | 1951 | 1961 | 1971 | 1981 |
|---|---|---|---|---|---|---|---|---|---|
| I | - | - | - | - | 1 | 1 | 1 | 1 | 1 |
| II | 1 | 1 | 1 | 1 | - | - | - | 1 | 3 |
| III | 1 | 1 | 1 | 1 | 1 | 4 | 6 | 7 | 10 |
| IV | 7 | 6 | 5 | 8 | 10 | 7 | 7 | 8 | 11 |
| V | 10 | 11 | 12 | 7 | 8 | 10 | 6 | 6 | 22 |
| VI | 10 | 10 | 12 | 12 | 8 | 13 | - | 1 | 2 |
| Total | 29 | 29 | 31 | 29 | 28 | 35 | 20 | 24 | 49 |

It is evident from the table that there was no town of class I status upto 1931. Only Jhansi achieved the status of Class I in 1941 for the first time. The number

of class II town remained one in first four census year and three in last census year. The number of class III towns increased only recently to 6 in 1961, 7 in 1971 and 10 in 1981 from 1 in 1901. In the number of class V towns fluctuation may be observed. The number of these towns increased to 22 in 1981 from 10 in 1901.

This shows the feeble nature of urbanisation in the region.

Size Class Distribution :

Size class of towns had been fluctuating during 1901-1981 (Table 3.6). Jhansi and Banda stood as class II and III towns respectively in 1901. Seven towns Rath, Mahoba, Charkhari, Konch, Kalpi, Mauranipur and Lalitpur were in class IV, ten towns Rajapur, Karwi-Tarauhan, Hamirpur, Maudaha, Kulpahar, Jalaun, Orai, Talbehat, Baruasagar and Samthar stood in class V and another ten towns Kalinjar, Sitapur, Jaitpur, Sumerpur, Madhogarh, Kotra, Chirgaon, Moth, Mahrauni and Baragaon in class VI. Jhansi and Banda remained in the same class in 1911. Charkhari gained the status of class V in 1911 from IV in 1901. Kalinjar and Kotra were excluded from the list of towns in 1911 from IV in 1901. Kalinjar and Kotra were excluded from the list of towns in 1911. Ranipur and Garhiapathak appeared for the first time in the urban map

of the region in the category of Class V. The number of towns in 1911 was one in class II and III, six in class VI, eleven in class V and ten in class.VI. The situation of class II and III towns remained the same in 1921 and 1931. Atarra and Naraini emerged as towns of class VI, resulting an increase of two in the total number of class VI towns, Rath changed its status of class IV in 1911 to V in 1921. Orai, Garhiapathak and Charkhari noted population increase and came to be included in class IV in 1931 to V in 1921. Ranipur and Talbehat stood as class VI towns. Two towns of class VI Jaitpur and Kulpahar were desclassified in 1931. Jhansi, with the inclusion of Garhiapathak, gained class I status in 1941. Karwi, Kalpi, and Jalaun came to be included in class IV from class V category. Atarra, Rajapur, Ranipur and Sumerpur changed their status to class V in 1941 from class VI in 1931. In 1951, Orai, Konch and Lalitpur gained the status of class III from class IV, Rajapur class VI from class V and Chirgaon class V from class VI, Kulpahar and Rampura emerged as towns of class V, Umri, Kadaura, Jagamanpur, Babina cantonment and Irich emerged as towns of class VI. Thus there were thirteen towns in class VI, ten in class V, seven in Class IV, four in class III and one in class I. The new definition of towns in 1961 census brought the change in the number of towns of some size-classes.

Table 3.6 : Variation in size-class of existing towns (1901-81).

| Towns | 1901 | 1911 | 1921 | 1931 | 1941 | 1951 | 1961 | 1971 | 1981 |
|---|---|---|---|---|---|---|---|---|---|
| Jhansi | II | II | II | II | I | I | I | I | I |
| Banda | III | III | III | III | III | III | III | II | II |
| Orai | V | V | V | IV | IV | II | III | III | II |
| Lalitpur | IV | IV | IV | IV | IV | III | III | III | II |
| Mahoba | IV | IV | IV | IV | IV | IV | III | III | III |
| Konch | IV | IV | IV | IV | IV | III | III | III | III |
| Mauranipur | IV | IV | IV | IV | IV | IV | III | III | III |
| Rath | IV | IV | IV | IV | IV | IV | IV | III | III |
| Kalpi | IV | IV | IV | IV | IV | IV | IV | III | III |
| Jalaun | V | V | V | V | IV | IV | IV | IV | III |
| Chitrakut Dham | V | V | V | V | IV | IV | IV | IV | III |
| Atarra | - | VI | VI | VI | V | V | - | IV | III |
| Maudaha | V | V | V | V | V | V | - | IV | III |
| Hamirpur | V | V | V | V | V | V | V | IV | III |
| Charkhari | IV | V | V | IV | IV | IV | IV | IV | IV |
| Samthar | V | V | V | V | V | V | V | IV | IV |
| Sumerpur | VI | VI | VI | VI | V | V | - | - | IV |
| Baruas-agar | V | V | V | V | V | V | - | - | IV |
| Babina Cantt | - | - | - | - | - | IV | IV | IV | IV |

Table 3.6 contd.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Gursarai | VI | VI | VI | VI | VI | VI | V | V | IV |
| Ranipur | - | V | V | VI | V | V | V | V | IV |
| Kulpahar | V | VI | VI | - | - | V | V | - | IV |
| Chirgaon | VI | VI | VI | VI | VI | V | V | V | IV |
| Kharela | - | - | - | - | - | - | - | - | IV |
| Rajapur | V | VI | VI | VI | V | VI | V | V | IV |
| Manikpur Sarhat | - | - | - | - | - | - | V | V | V |
| Baberu | - | - | - | - | - | - | - | - | V |
| Kabrai | - | - | - | - | - | - | - | - | V |
| Moth | VI | VI | VI | VI | VI | VI | - | - | V |
| Tondi Fatehpur | - | - | - | - | - | - | - | - | V |
| Talbehat | V | V | V | VI | VI | VI | - | V | V |
| Bisanda Buzurg | - | - | - | - | - | - | - | - | V |
| Rampura | - | - | - | - | - | V | - | - | V |
| Madhogarh | VI | VI | VI | VI | VI | VI | - | - | V |
| Pali | - | - | - | - | - | - | - | - | V |
| Mahroni | VI | VI | VI | VI | VI | VI | - | - | V |
| Kurara | - | - | - | - | - | - | - | - | V |
| Umri | - | - | - | - | - | VI | - | - | V |
| Naraini | - | - | VI | VI | VI | VI | - | - | V |
| Mataundh | - | - | - | - | - | - | - | - | V |
| Kadaura | - | - | - | - | - | VI | - | - | V |

Table 3.6 contd.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Sarila | - | - | - | - | - | - | - | - | V |
| Kotra | VI | - | - | - | - | - | - | - | V |
| Irich | - | - | - | - | - | VI | - | - | V |
| Gohand | - | - | - | - | - | - | - | - | V |
| Nadigaon | - | - | - | - | - | - | - | - | V |
| Baragaon | VI | - | - | - | - | - | - | - | V |
| Kathera | - | - | - | - | - | - | - | - | VI |
| Aran | - | - | - | - | - | - | - | - | VI |

Mahoba and Mauranipur were upgraded to class III in 1961 from class IV in 1951. Rajapur and Gursarai ranked class V from class VI. Babina cantonment rose to class IV from class VI and Hamirpur town achieved the status of class IV from class V. Manikpur emerged as a new town of class V in 1961. Six towns of class V Baruwasagar, Rampura, Atarra, Maudaha, Sumerpur and Kulpahar and nine towns of class VI. Naraini, Umri, Jagamanpur, Kadaura, Madhogarh, Irich, Moth, Mahrauni and Talbehat were excluded from the list of towns. Thus there were six towns in each class V and III, seven in class IV and one in class I in 1961. Atarra and Maudaha reappeared as class IV towns and Talbehat as class V in 1971. Hansarigird emerged as class VI. Rath and Kalpi showed an increase in their status to class III from class IV. Samthar to class IV from Class V and Banda to class II from class III. Thus number of towns was one in

each class I, II and VI, seven in class III, eight in class IV and six in class V in 1971. In 1981, Orai and Lalitpur gained the status of class II from class III, Jalaun, Chitrakutdham, Atarra, Maudaha and Hamirpur Class III from Class IV, Gursarai, Ranipur, Chirgaon and Rajapur class IV from Class V. Four towns Sumerpur, Baruasagar, Kulpahar and Kharela in class IV, 20 towns in Class V and two towns Kathera and Oran in class VI appeared as new towns in last census. Thus, the number of towns was 1 in class I, 3 in Class II,10 in class III, 11 in class IV, 22 in class V and 2 in class VI in 1981.

Degree of Urbanisation :

It is a proportion of urban population to total population at a given time. The degree of urbanisation of a region indicates its cultural development. Table 3.7 provides the degree or level of urbanisation of the region in different decades.

The region is regarded as a backward region of the State. Its degree of urbanisation is lower than that of the developed districts of the State. The degree of urbanisation in 1981 was 19.88 in the region. Various factors individually or collectively are responsible for lower degree of urbanisation in the region. Agriculture is of traditional character. Industrially also, the region is backward. Transport facilities do not meet the

Table 3.7 : Degree of Urbanisation.

| Years | Urban Population as percentage of total population |
|---|---|
| 1901 | 11.81 |
| 1911 | 11.97 |
| 1921 | 12.43 |
| 1931 | 12.37 |
| 1941 | 12.88 |
| 1951 | 15.07 |
| 1961 | 13.25 |
| 1971 | 14.33 |
| 1981 | 19.88 |

requirements of the region. All these factors made the region less urbanised.

Urbanisation process follows a cyclic way and "exhibits a pattern in which the rate of change is slow at first then rises steeply as the early stages of industrialization are reached and tapers off gradually when the proportion of urban begins to reach a saturated point[35]. Northam has recognised three stages of urbanisation (Fig. 3.38). In the first stage, the curve representing the urbanisation trend remains flattish and rises gradually. The economic structure is characterised by primary

activities. The population is dispersed and rural. The proportion of urban population is less than 25%. The workers of non-primary activities concentrate greatly in urban centres. This stage has been called as accelerating stage. The third stage called as terminal stage, reaches when the proportion of urban population is in excess of 60% or 70%. The curve representing this stage is flattish. Still some proportion of population remains rural to satisfy the needs of urban dwellers[36]. A French Geographer P. George has labelled the countries with urban population under 20% of total population as countries of old agricultural civilization[37].

The degree of urbanisation in the region was 11.81% in 1901, 12.88% in 1941, and 19.88% in 1981 (Fig. 3.3C). When the degree of urbanisation of the region is seen from the above angles, it can be safely said that the urbanisation of the region is in its initial stage and the economy is characterised by old agricultural civilization.

Spatial Distribution of Urbanisation :

The delineation of areas having varying degrees of urbanisation will tend to show the spatial imbalances in the economic development of the region. The spatial distribution of urbanisation in the region has been shown on the map (Fig.3.3A). The tahsils of the region have

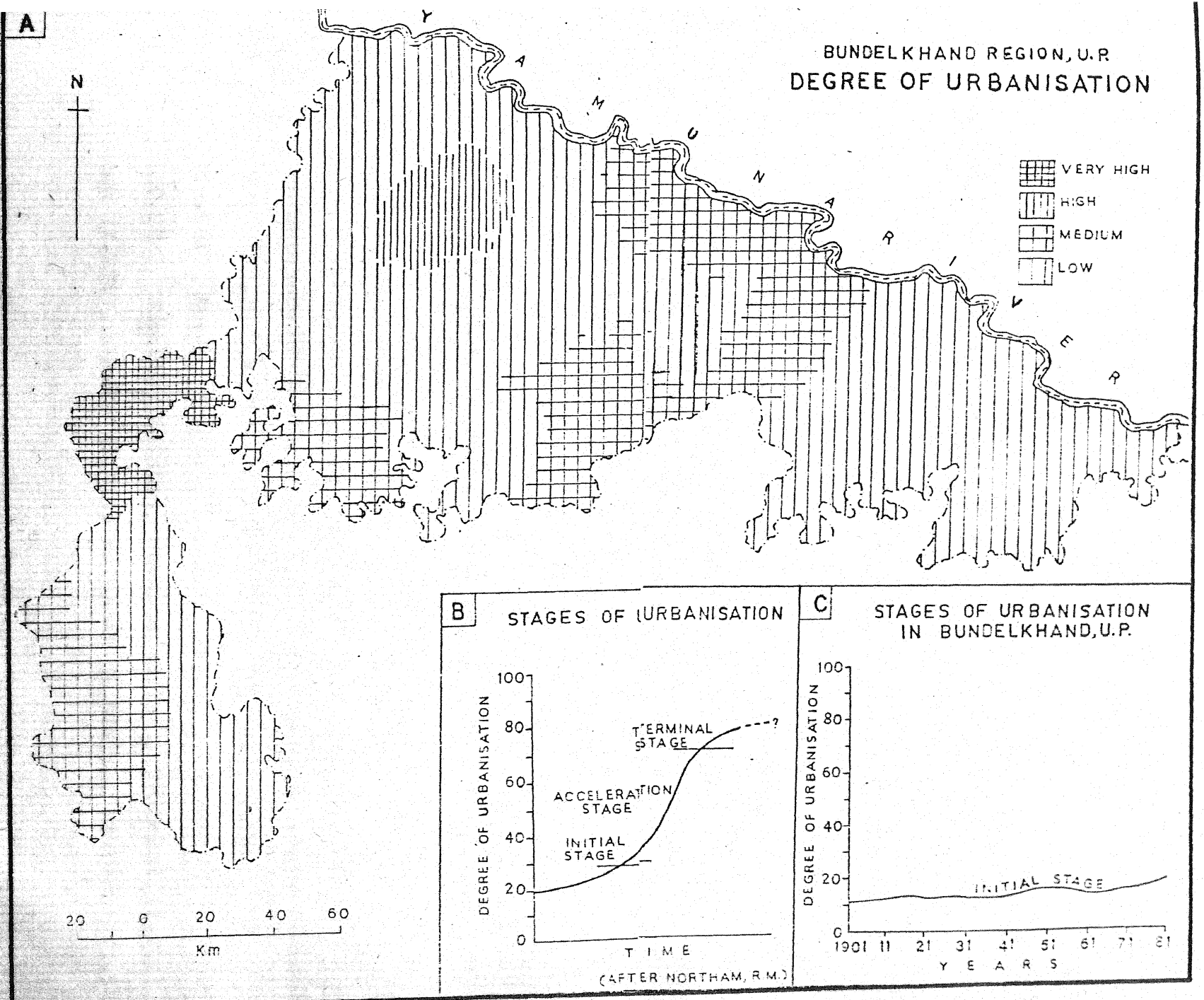
A
BUNDELKHAND REGION, U.P
DEGREE OF URBANISATION
N
VERY HIGH
HIGH
MEDIUM
LOW
20 0 20 40 60
Km
B
STAGES OF URBANISATION
DEGREE OF URBANISATION
100
80
60
40
20
0
TERMINAL STAGE
ACCELERATION STAGE
INITIAL STAGE
TIME
(AFTER NORTHAM, R.M.)
C
STAGES OF URBANISATION IN BUNDELKHAND, U.P.
DEGREE OF URBANISATION
INITIAL STAGE
1901 11 21 31 41 51 61 71 81
YEARS

FIG. 3·3

been graded on the basis of their degrees of urbanisation with reference to the regional mean and the standard deviation in degree of urbanisation. The standard deviation (SD) has been calculated. The regional mean and standard deviation have been collectively used to gauge the intensity of urbanisation in the tahsils. The resultant figures are given in table (3.8).

Table 3.8 : The Measurement of Urbanisation in the Region (1981).

| Degree of Measurement | No.of Tahsils | Intensity of urbanisation |
|---|---|---|
| Below the regional Mean-17.96% | 14 | Low |
| 17.96% - 31.70% (Mean + SD1) | 6 | Medium |
| 31.70% - 45.44% (Mean + SD2) | 1 | High |
| Above 45.44 | 1 | Very high |

The table reveals the diversity of urbanisation in the region. Fourteen tahsils have the degree of urbanisation below the regional mean of 17.96% and fall into the category of low urbanisation. These tahsils are Rath (16.46%), Moth (16.29%), Kalpi (16.25%), Jalaun (13.84%), Konch (13.04%), Garautha (12.61%), Karwi (10.89%), Naraini (10.32%), Maudaha (8.73%), Talbehat (7.49%) Mau (7.12%), Baberu (5.91%), Kulpahar (5.84%) and Mahrauni (3.50%).

Most of these tahsils lie on the central part of the region. Six tahsils exhibited the medium intensity of urbanisation. These are Mahoba (29.00%), Charkhari (28.20%), Lalitpur (26.59%), Mauranipur (21.72%), Banda (21.70%) and Hamirpur (20.73%). Banda and Lalitpur tahsils have class II towns and each remaining tahsil has class III towns. Only orai (36.77%) and Jhansi (66.33%) tahsils have high and very high degree of urbanisation respectively.

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# CHAPTER IV

## POPULATION PROFILE

Population has far reaching effects in modifying the physio-cultural face of the earth. Man, as producer and consumer of goods, is main resource, without him all the natural resources are inactive[1]. Of course, spatial distributional pattern, density, compositional structure of population which effect the culture, culture area and expansion of culture of a region[2], are the pivot of cultural landscape. Therefore the analysis of these population attributes is necessary to evaluate the development as well as cultural landscape of the region.

### Trends of Population Change :

The tools and implements of 'hand-axe' culture, found in the different parts of the region, represent that the region was scantly populated by primitive tribes in the ancient period. In the later vedic period (800 B.C.), the Trans-Yamuna plain gravitated the people from 'Aryavart', whenever they moved south-eastward[3]. But even in those days it was much sparsely populated due to dense forests, rugged topography and unhealthy climate. So, the population remained stationary till the advent of Rajputs. Under the chandela rulers, Bundelkhand enjoyed peace and prosperity[4]. But after the 11th Century, the region was mostly disturbed

on account of battles. Even in the British period, it was the battle ground of Britishers and Hindu Rajas. Therefore, the conditions for peopling were not favourable. However, people inhabited in the region in the prevailing conditions. It was the British period when population increased by and large because of the improvement in socio-economic conditions.

In the region the growth of population has been greatly influenced by physical as well as socio-economic conditions. It harsh climate, rugged topography and epidemic diseases restricted the population growth at the beginning of 20th century, but now, the increasing means of transport, medical facilities and irrigation have reversed the trends. The first enumeration of population was done in 1865 and the next in 1872 and 1881. After that, the enumeration of population is being done at an interval of 10 years. The census of 19th century was irregular, therefore, Author has attempted to analyse the trend of population change from 1901 (Table 4.1). Population increased to 54.38 Lakh from 21.06 Lakh, registering an increase of 158.21 percent during the last period of 80 years (Appendix V). However this growth has not been continuous and steady. From 1901 to 1921 a decline trend in the population change is observed, while after 1921 an increasing trendis noticed (Fig.4.1).

Table 4.1 : Trend of Population Change in the Region (1901-81).

| Tahsils/ Region | Decadal Growth in percentage | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1901-11 | 1911-21 | 1921-31 | 1931-41 | 1941-51 | 1951-61 | 1961-71 | 1971-81 |
| Moth | -1.13 | -8.63 | 10.39 | 79.88 | 2.87 | 29.35 | 21.08 | 24.82 |
| Garautha | 8.45 | 5.28 | 11.21 | 35.66 | -5.78 | 23.68 | 27.22 | 22.45 |
| Maurani-pur | 3.97 | -6.56 | 4.79 | 7.18 | 3.49 | 28.64 | 25.07 | 27,12 |
| Jhansi | 14.84 | -10.17 | 16.82 | 13.59 | 16.91 | 29.50 | 13.68 | 38.46 |
| Lalitpur | 10.25 | -13.14 | 14.88 | 12.23 | 4.74 | 18.48 | 16.96 | -8.29 |
| Mahrauni | 17.84 | -23.29 | 20.36 | 14.06 | -1.38 | 19.10 | 17.20 | 8.97 |
| Hamirpur | 11.00 | 3.57 | 4.88 | 29.05 | 5.34 | 19.92 | 25.41 | 26.30 |
| Rath | -2.13 | -8.72 | 5.48 | 25.92 | 3.77 | 19.13 | 21.39 | 20.09 |
| Char-khari | -3.15 | -6.87 | 18.10 | 43.05 | -2.42 | -16.14 | 30.92 | -42.74 |
| Maudaha | 3.88 | -3.65 | 41.92 | 12.01 | 4.21 | 20.48 | 25.85 | 13.71 |
| Mahoba | 2.60 | 37.54 | 105.68 | -52.36 | 5.12 | 83.13 | 19.85 | -16.05 |
| Jalaun | 1.13 | 0.48 | 3.55 | 20.92 | 5.58 | 15.93 | 17.12 | 20.26 |
| Konch | -0.45 | 1.77 | 5.18 | 14.16 | 6.35 | 17.57 | 24.79 | 16.56 |
| Orai | -1.01 | 11.95 | 15.35 | 8.86 | 11.99 | 37.68 | 32.59 | 27.04 |
| Kalpi | -5.62 | -4.55 | -1.17 | 44.95 | 8.49 | 22.07 | 21.90 | 23.48 |
| Banda | -0.85 | -3.71 | -10.72 | 14.81 | 8.00 | 20.00 | 25.81 | 28.62 |
| Baberu | 4.69 | -10.81 | -1.28 | 17.61 | 9.67 | 21.19 | 24.13 | 27.46 |
| Naraini | 7.02 | -9.67 | -17.26 | 17.31 | 8.88 | 24.07 | 26.98 | 32.51 |
| Karwi | 8.09 | -1.50 | 66.43 | 27.80 | 2.54 | 19.64 | 20.16 | 31.02 |
| Mau | 5.14 | -4.14 | 4.35 | 9.86 | 3.22 | 16.95 | 21.61 | 31.47 |
| Region | 4.83 | -5.35 | 8.18 | 13.80 | 5.53 | 21.13 | 22.63 | 26.73 |

N.B. Kulpahar and Talbehat have been constituted as new tahsils in 1981. The population of these tahsils is not available for past decades.

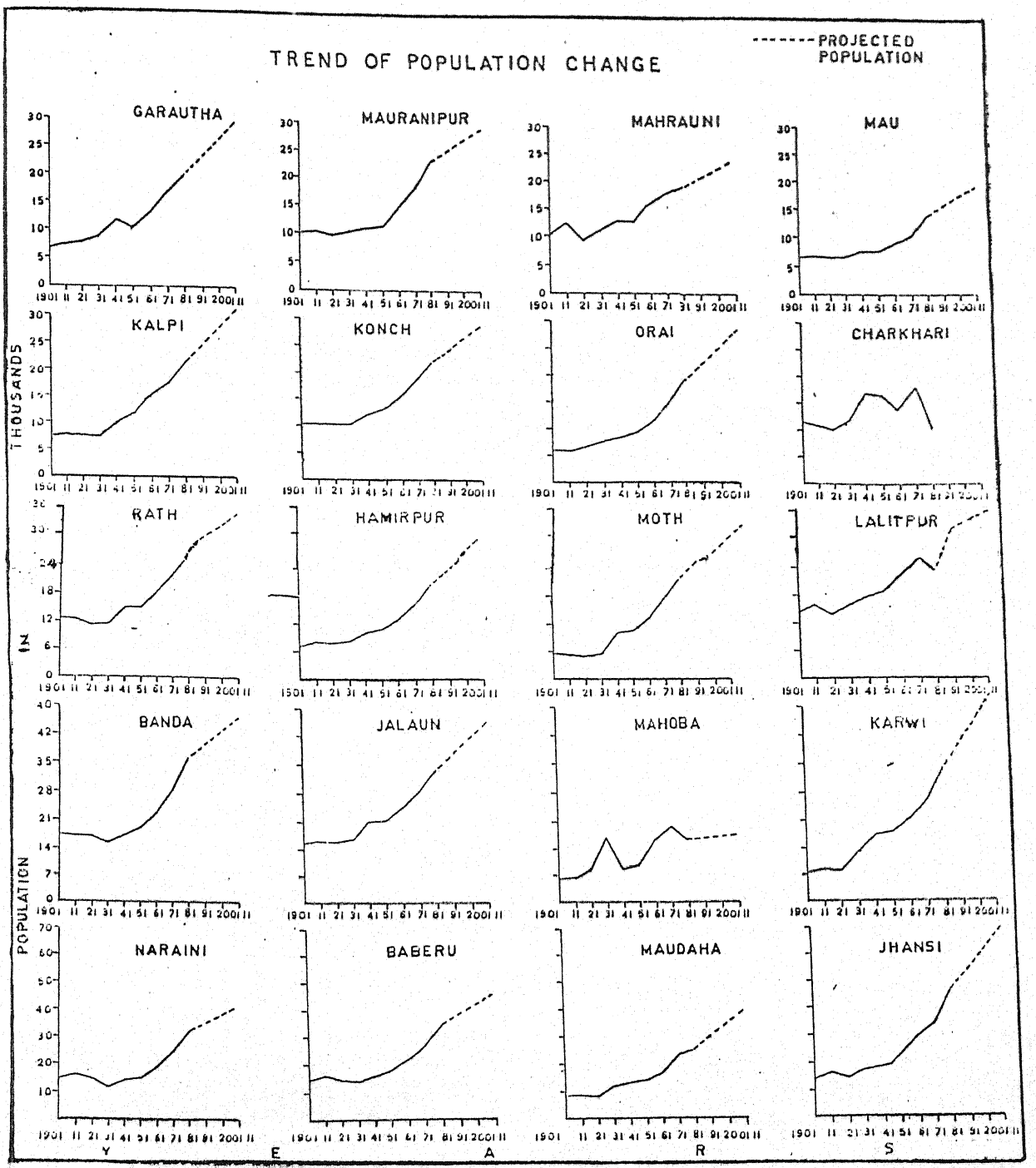
TREND OF POPULATION CHANGE
-------PROJECTED POPULATION
GARAUTHA
MAURANIPUR
MAHRAUNI
MAU
KALPI
KONCH
ORAI
CHARKHARI
RATH
HAMIRPUR
MOTH
LALITPUR
BANDA
JALAUN
MAHOBA
KARWI
NARAINI
BABERU
MAUDAHA
JHANSI
POPULATION IN THOUSANDS
YEARS

FIG. 4.1

Therefore the trend of population change has been traced out in the following heads:

(i) The period of slow growth.

(ii) The period of decline.

(iii) The period of rapid growth.

(i) The period of Slow Growth :

The period between 1901 and 1911 was the period of slow growth of population in the region. In 1901, the population of the region was 21.06 Lakh which increased to 22.07 Lakh showing an increase of 4.83 percent. So far as spatial growth is concerned, the highest percentage of growth is recorded by Mahrauni tahsil (17.8%) followed by Jhansi (14.8%), Hamirpur (11.00%) Lalitpur (10.25%), Garautha (8.45%), Karwi (8.1%) and Naraini (7.02%) tahsils. In remaining tahsils, it was between 2 to 5 percent. The highest decrease of population was registered in Charkhari tahsil (3.15%) followed by Rath (2.13%), Moth (1.13%), Orai (1.01%), Banda (0.85%) and Konch (0.45%) tahsils.

The first four year of the decade were a period of returning prosperity. The unfavourable conditions of monsoon witnessed the bad harvests of 1905-1906. Severe famine of 1907-1908, wide spread malaria, cholera and small pox in later half of the decade resulted in lower birth rate. However the birth rate (45.50%) exceeded the death rate

(40.22%)due to the pressure of majority of population in reproductive age.

(ii) The period of Decline :

During 1911-21, the population of the region declined to 20.87 Lakh from 22.07 Lakh recording the decrease of 5.35 percent which was higher than that of the State (3.8%). Generally, all the tahsils of the region suffered human loss. The amount of loss was however not uniform throughout the region. The highest was noted in Mahrauni tahsil (23.3%) followed by Lalitpur (13.14%), Orai (11.95%), Baberu (10.81%), Jhansi (10.17%), Naraini (9.67%) and Rath (8.72%) Tahsils. In remaining tahsils, it was below 9%. Kalpi, Maudaha, Mau, Banda and Hamirpur tahsils recorded the decrease between 3 to 5 percent. Jalaun (0.48%) and Konch (1.77%) tahsils registered the minimum human loss. Consequences of the prevailing plague, Cholera and Fever were the main causes to this decrease in the region at the beginning of the decade. The last four years of the decade were unhealthy years among which the years of 1918 and 1919 were the worst. Consequently, the region suffered heavy human loss. In the report of Census 1921, the Census Superintendent Mr. Edye attributed the decrease of this decade "to diseases to which all other influences were insignificant, to some extent to Plague, Cholera and Malariya

but other overwhelmingly to the influenza epidemics[5]. Both males and females suffered loss in the reproductive age, resulting a decrease in reproductive capacity. Consequently the brith rate fell more than the death rate and population of the region declined.

(iii) The Period of Rapid Growth :

The decade of 1921-31 was a transitional phase in which increase of 8.18 percent was noticed in the region. The increase was slightly higher than that of the State (6.67%). The highest increase was recorded by Mahoba tahsil (105.68%) followed by Karwi (64.43%), Maudaha (41.92%), Mahrauni (20.36%), Charkhari (18.10%), Naraini (17.26%), Jhansi (16.82%), Orai (15.35%), Garautha (11.21%) Banda (10.72%) and Moth (10.39%) tahsils, while in the remaining tahsils, it was not more than 6 percent. The lowest increase was recorded by Jalaun (3.55%) tahsil. Exception was noted in Kalpi tahsil where population decreased by 0.65 percent. Decline in death rate, absence of epidemic deseases and relatively high general standard of public health[6], were the main causes of population growth during this decade.

During the next decade (1931-41), rapid growth of population was observed in the region. It rose to 27.36 Lakh from 24.04 Lakh registering an increase of 13.80% which was much higher than that of the State (13.57%). Increasing

trend of population was recorded by all the tahsils. The highest increase was observed in Moth tahsil (79-88%) while in other tahsils like Kalpi, Garautha, Rath and Baberu it was 45%, 35.66%, 25.92% and 17.61% respectively. Remaining tahsils noted an increase below 15%.

During the decade of 1941-51, the population of the region increased to 28.88 Lakh from 27.36 Lakh amounting an increase of 5.53 percent which was considerably less than that of the State (14.9%). The highest increase was noted in Jhansi tahsil (16.8%), followed by Orai (11.99%), Baberu (9.67%), Naraini (8.88%), Kalpi (8.5%) and Banda (8.0%) tahsils. Hamirpur, Maudaha, Rath, Jalaun and Konch tahsils of the region registered the increase between 3-6 percent. However, decrease between 2-6 percent was also noted in Garautha, Mahrauni, Kulpahar and Charkhari tahsils. It is interesting to note that the slow movement of population coincided with great political disturbances and natural disasters. In the second world war, the region suffered a lot of casualities. The confusion of war checked the increase of population. Moreover, epidemics and floods also shortened the number of people year by year. Plague (1946), Flood (1948) and the epidemic Cholera (1950) were the main causes that controlled the population change in this decade[7].

At the beginning of the decade 1951-61, the total population of this region was 28.88 Lakh and at the end, it rose 34.98 Lakh with an increase of 21.13% which was higher than that of the State. All the tahsils of the region registered an accelerated growth in population during this decade. The highest growth (83.13%) was in Mahoba tahsils it was 37.68% in Orai, 29.50% in Jhansi, 29.35% in Moth, 24.07% in Naraini, 23.68% in Garautha and 22.07% in Kalpi. Banda, Baberu, Maudaha and Mahrauni tahsils recorded increase between 20-23 percent, whereas Karwi, Mau, Hamirpur, Jalaun, Rath and Lalitpur tahsils between 14-20 percent. It was interesting feature that the growth of population was sufficiently higher in upland of Bundelkhand than that in the lowland. The factors, responsible for this rapid growth, were more availability of land under cultivation, better provision of medical facilities, education, transport, communication and security facilities.

During the decade of 1961-71, the population of the region increased from 34.98 Lakh to 42.90 Lakh showing an increase of 22.63% which was higher than that of the State (19.78%). During this decade, the death rate was less than birth rate, with the result, the population of the region increased rapidly. The highest increase was in Orai tahsil (32.59%) followed by Charkhari (30.92%), Moth (31.08%), Garautha (27.22%), Naraini (26.98%), Maudaha

(25.85%), Mauranipur (25.07%), Hamirpur (25.41%), Konch (24.79%) and Baberu (24.13%), tahsils. In remaining tahsils of the region, it was observed between 13 to 20 percent. The increase was due to the self sufficiency of food and better medical and transport facilities found in this region.

In the decade of 1971-81, a big rise of population was observed registering an increase of 26.73 percent which was not only higher than that of the State (25.49%) but also than that of the country (25.00%). In Charkhari (42.74%), Mahoba (16.05%) and Lalitpur (8.29%) tahsils the population decreased due to the newly created tahsils of Talbehat and Kulpahar in Lalitpur and Hamirpur districts respectively. Except Maudaha (13.71%) and Mahrauni (8.97%) tahsils, all the tahsils of the region registered increase between 20 to 32 percent. Rapid growth in the region was the result of better economic developments and greater control of epidemics, floods and droughts.

On the basis of foregoing discussiom, it may be asserted that with the establishment of the british rule and the restoration of a measures of internal peace in the sense of averted wars and the setting up of a skeleton of health and medical services, the population began to grow slowly upto the turn of the twentieth century and rapidly after 1921[8]. If this growing trend continues, it will bring

barriers for better economic development. Efforts should, therefore, be made to restrict this menacing growth trend by propagating family planning measures and bringing down the birth rate.

SPATIAL DISTRIBUTION OF POPULATION :

The population distribution in any region is closely related to its physical, economic and social environments. Oneof the most important task of Geographers is to explain the spatial variation in population concentration in terms of the above factors. In the study region, the influence of surface configuration, climatic characteristics, land resources, transportational facilities is noticeable in the distribution of population. The greatest concentration of population on the northern plain, pronounced sparsity on the southern upland and moderate concentration in riverine belt of Yamuna and the transitional belt between the upland and lowland are the most striking features of population distribution in the region (Fig. 4.2). Thus, the spatial distribution of population may be categorised into three main parts given below :-

(i) Areasof High Concentration :

Jalaun, Hamirpur, and Banda plains, southern and central Betwa - Pahuj tract and northern Betwa-Dhasan tract fall under this category. These areas of fertile alluvial soils are intensively cultivated mainly for wheat, gram,

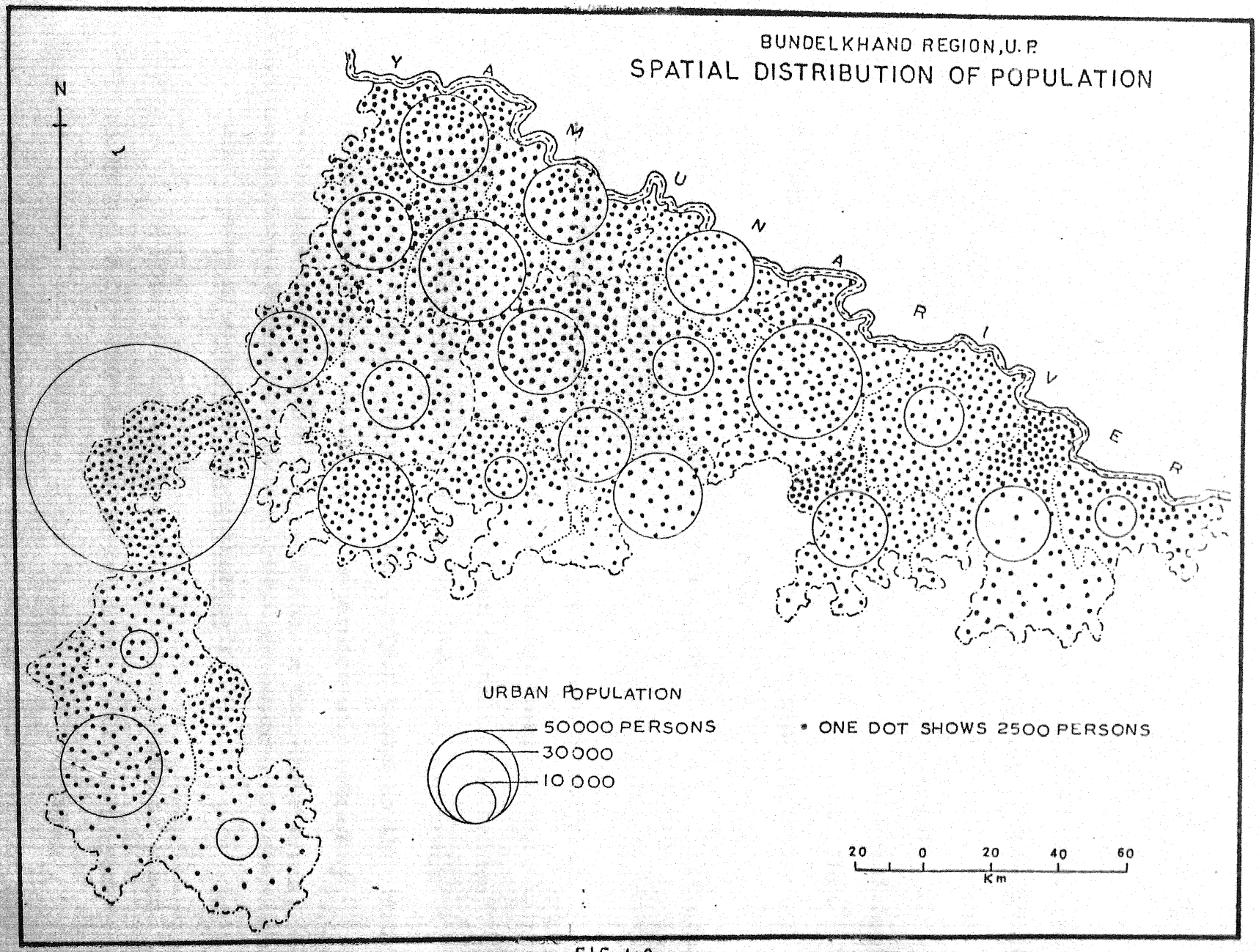
BUNDELKHAND REGION, U.P.
SPATIAL DISTRIBUTION OF POPULATION
N
YAMUNA RIVER
URBAN POPULATION
50000 PERSONS
30000
10000
• ONE DOT SHOWS 2500 PERSONS
20 0 20 40 60
Km

FIG. 4:2

pulses and oilseeds. The southern and central Betwa-Pahuj tract is the most urbanised area of the region, of which Jhansi is the centre. The inner parts of this tract are more densely populated than the outer parts due to relatively greater fertility of soils and better sources of irrigation. The northern Betwa-Dhasan tract, found in western part of the region, has dense population due to favourable conditions for growing pulses, oil seeds and other food crops. Here Mauranipur has developed as the most important grain market of Bundelkhand. The central Dhasan tract in Hamirpur and Banda plains extending east to west, are also well cultivated and thickly populated.

Banda, Chitrakutdham, Atarra and Rajapur towns in Banda plain, Rath, Charkhari and Maudaha towns in the Hamirpur plain, Orai, Kalpi, Konch and Jalaun towns in the Jalaun plain, Samthar Chirgaon towns in the Pahuja-Betwa tract central and south, Ranipur and Mauranipur towns in the north of the Dhasan-Betwa tract south determine significantly the concentration of urban population in the above areas.

(ii) Areas of Moderate Concentration :

The Sindh-Pahuj tract south, the Betwa-Dhasan tract south and north and the Dhasan-Ken tract north and south fall under this category. Less fertile red and yellow, Parua, Mar and Ranker soils are found in these rolling nature

areas. But these soils are not so much fertile as alluvial soils of Bundelkhand plain. Moreover, these areas have relatively even distribution of population. Mahoba and Hamirpur are the main towns situated in areas of moderate population concentration.

(iii) Areasof Sparse Concentration :

The south western and extreme south eastern sectors of the Vindhyan hills and plateaus are included into this group. These areas are characterised by rugged topography, forested land and scarcity of culturable land. Therefore, population is mainly confined along the roads and cultivated small summit plains. The hill tops and upper surface of the plateaus are, more or less, uninhabited because these areas are covered either by dense forests or unproductive rock terrain. Talbehat, Babina contonment, Lalitpur in the south west and Manikpur in the east are the main towns of these areas.

DENSITY OF POPULATION :

To understand the actual pressure of population on the land resources[9] necessiates to study the spatial distribution of population density because general distribution of population does not provide clear picutre of human pressure on land. Here four types of densities as Arithmetic density, Physiological density, Agricultural density and Nutritional

density have been discussed.

(i) Arithmetic Density :

The ratio of the total population and total area is termed as arithmetic density. The table (4.2) indicates that the region has an average arithmetic density of 181.83 persons per $Km^2$ which is much lower than that of the State (377) as well as country (216). The main causes of the low density in the region are its uneven topography, backward agriculture, slow pace of unbanisation and very low industrialisation.

The arithmetic density of the region varies spatially from 115.36 persons/$Km^2$ (in Charkhari tahsil) to 315.17 persons/$Km^2$ (in Jhansi tahsil). The region may be conveniently divided into following areas to explain the spatial variations in density (Fig. 4.3A):

(i) Areasof very high density (Above 250 persons per $Km^2$).
(ii) Areas of high density (Between 200-250 persons per $Km^2$).
(iii) Areas of moderate density (150-200 persons per $Km^2$).
(iv) Areas of low and very low density (Below 150 persons per $Km^2$).

(i) Areas of Very High Density :

Jhansi and Jalaun are the tahsils possessing very high density. The higher density in Jhansi tahsil (315.17) is due to the existence of Jhansi city and other urban centres.

Table 4.2 : Different Types of Densities in the Region (1981)

(Persons per Sq.Km.)

| Tahsils/ Region | Arithmetic Density | Physiological Density | Agricultural Density | Nutritional Density |
|---|---|---|---|---|
| Moth | 178.36 | 230.11 | 192.63 | 240.71 |
| Garautha | 130.95 | 174.88 | 152.83 | 178.80 |
| Mauranipur | 210.50 | 283.28 | 221.76 | 310.06 |
| Jhansi | 315.17 | 1043.68 | 351.27 | 1148.06 |
| Talbehat | 115.50 | 260.89 | 241.34 | 338.32 |
| Lalitpur | 117.73 | 282.39 | 207.31 | 299.37 |
| Mahrauni | 136.85 | 242.70 | 234.21 | 286.29 |
| Hamirpur | 198.34 | 252.04 | 199.80 | 268.29 |
| Rath | 167.94 | 228.35 | 190.77 | 245.27 |
| Kulpahar | 186.55 | 295.00 | 277.79 | 358.68 |
| Charkhari | 115.34 | 149.59 | 107.31 | 160.68 |
| Maudaha | 161.51 | 196.11 | 178.99 | 211.84 |
| Mahoba | 183.61 | 266.65 | 189.31 | 295.61 |
| Jalaun | 259.36 | 311.78 | 268.63 | 346.57 |
| Konch | 211.26 | 247.43 | 202.74 | 261.96 |
| Orai | 199.93 | 286.53 | 181.17 | 213.72 |
| Kalpi | 171.67 | 228.68 | 191.53 | 240.19 |
| Banda | 223.42 | 276.48 | 216.48 | 385.34 |
| Baberu | 223.87 | 227.33 | 213.90 | 231.29 |
| Naraini | 232.87 | 247.27 | 221.74 | 253.37 |
| Karwi | 146.09 | 289.32 | 267.82 | 303.30 |
| Mau | 139.52 | 279.73 | 259.83 | 298.24 |
| Region | 181.83 | 265.36 | 212.59 | 282.42 |

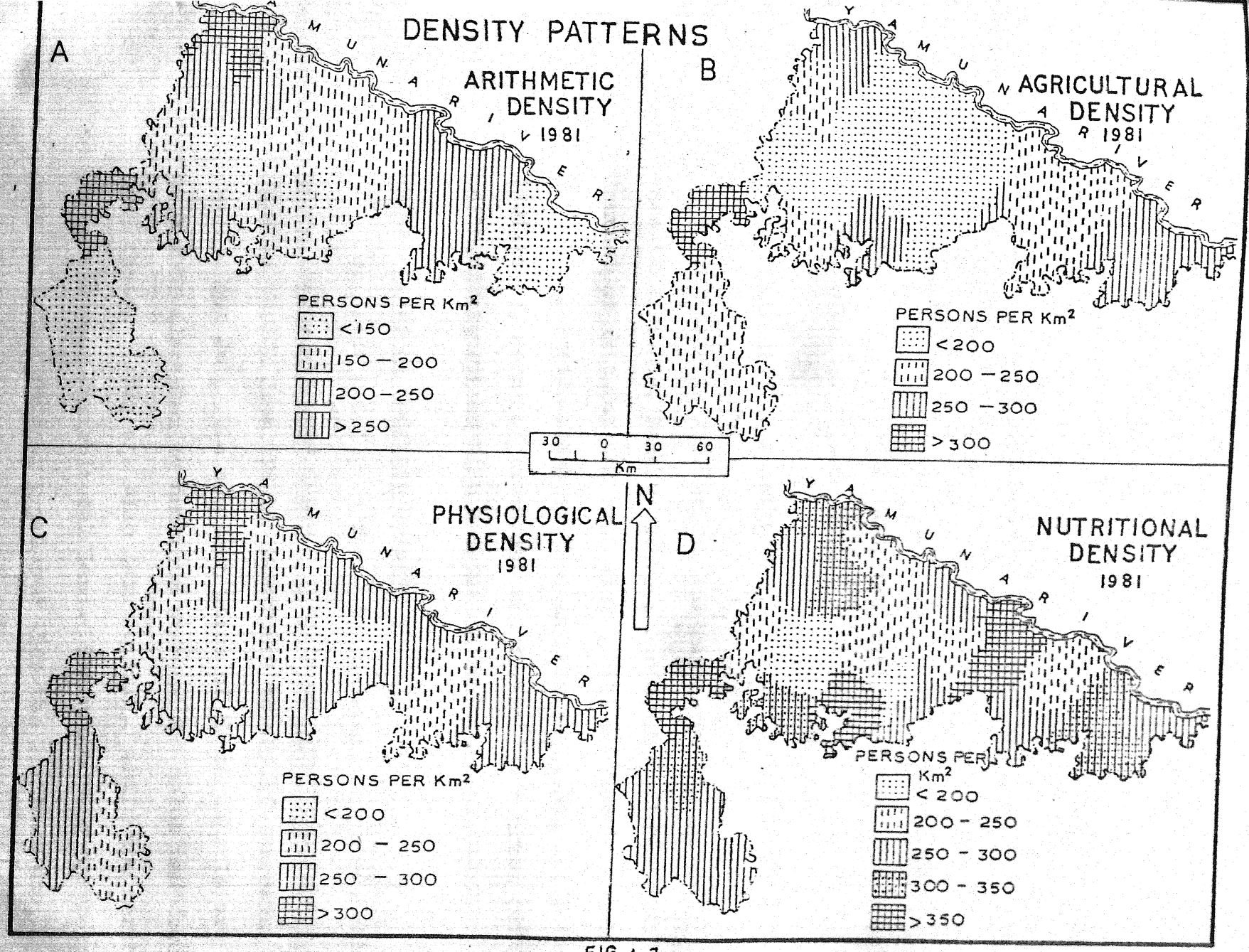
DENSITY PATTERNS
A
ARITHMETIC DENSITY 1981
PERSONS PER Km²
<150
150 – 200
200 – 250
>250
B
AGRICULTURAL DENSITY 1981
PERSONS PER Km²
<200
200 – 250
250 – 300
>300
30 0 30 60
Km
N
C
PHYSIOLOGICAL DENSITY 1981
PERSONS PER Km²
<200
200 – 250
250 – 300
>300
D
NUTRITIONAL DENSITY 1981
PERSONS PER Km²
< 200
200 - 250
250 - 300
300 - 350
>350

FIG. 4.3

It is relatively more industrialised and urbanised part of the study area due to the intensively spread of roads and railways which have fed raw materials to the regional industries. Very high density in Jalaun tahsil (259 persons per $Km^2$) is due to fertile agricultural land and the existence of Jalaun town and other significant service centres as Rampur Jagir (6351 persons), Umri (5459 persons) and Madhogarh (5133 persons).

(ii) Areas of High Density :

Six tahsils fall under this category. These are Naraini (232.87), Baberu (224.0), Banda (223), Konch (211), Mauranipur (210.00) and Orai (200). All the factors such as relief, availability of good and fertile land, irrigational facilities, means of transport and proximity of urban centres collectively caused high density in these areas.

(iii) Areas of Moderate Density :

Moderate density is found in Hamirpur, Kulpahar, Mahoba, Moth, Kalpi, Rath and Maudaha tahsils of the region where density varies from 198.34 (Hamirpur) to 161.50 (Maudaha) persons per $Km^2$. The southern parts of these tahsils are high land dissected by numerous streams and nalas and covered by forests. Soils are also less fertile. While the northern parts are good agricultural land. Therefore, the northern part is rather densely populated than the southern one.

but at regional average these tahsils are the areas of moderate density.

(iv) Areas of Low and Very Low Density :

Karwi (146.09), Mau (139.52), Mahrauni (136.85) and Garautha (130.95) tahsils are the areas of low density. Uneven topography, less developed agriculture and inadequate means of transport are responsible factors for the low density in these areas. Lalitpur (117.73), Talbehat (115-50) and Charkhari (115.36) tahsils are the areas of very low density in the region. These areas are characterised by inaccessible hilly and intensively forested land. Hence these areas have not much supporting capacity to the people .

2. Physiological Density :

It is the ratio between total population and total cultivated area and is expressed in terms of number of persons per $Km^2$ of cultivated land. Therefore it focuses the pressure of population on the cultivated area. By such density, one can learn better manland relationship. Therefore study of such a density is of special significance for regions which are primarily agricultural.

The physiological density of the study area has been calculated and the results are given in table (4.2). The physiological density in the region is 265.36 persons per $Km^2$ of cultivated area. Among the tahsils ~~the~~ spatial

variation is apparent with a variation in population and cultivated area (Fig. 4.3C).

Jhansi tahsil accounts highest density (1043.68 persons/ $Km^2$ of cultivated land) followed by Jalaun (311.78), Kulpahar (295.00), Karwi (289.32), Orai (286.53), Mauranipur (283.28), Lalitpur (282.39), Mau (279.73), Banda (276.48) and Mahoba (266.65) tahsils. In the aforesaid tahsils, the pressure of population on the cultivated land is very high. This shows that if the agriculture is not well irrigated and mechanised, the general conditions of the people will be poor because of the high pressure of population on the cultivated area.

The tahsils like Talbehat, Hamirpur, Konch, Naraini, Mahrauni, Moth, Kalpi, Rath, Baberu, Maudaha and Garautha have the physiological density between 175 to 260 persons. It shows a moderate pressure of the population on the cultivated land, if the agriculture of these tahsils becomes advanced, the people may be more prosperous.

3. Agricultural Density :

It is expressed in terms of agricultural population per $Km^2$ of cultivated area[10]. Agricultural density is an effective measure and is a better useful technique to know man-land relationship in the region where vast majority of inhabitants is engaged in agricultural pursuits.

Table 4.2 shows that the highest agricultural density (351.27) is recorded in Jhansi tahsil which is higher than that of the region (212.59). Spatial variation in agricultural density is obviously noticeable in the region (Fig. 4.3B).

4. Nutritional Density :

Nutritional density is a micro-fine shape of physiological density. It is the ratio between total population and total food cropped area. Therefore, it will be a true measure of relation between man and land in the region.

The nutritional density of the study region has been calculated and given in table (4.2). The results are showing great variation in nutritional density of the region (Fig. 4.3D). Nutritional density of the region is 282 persons per $Km^2$ of cropped area. Among the tahsils, Jhansi tahsil records the highest density of 1148.06 persons followed by Kulpahar (358.68), Jalaun (346.57), Orai (317.72), Mauranipur (310.05) and Karwi (303.30) tahsils. In the remaining tahsils, it ranges between 160 to 300 persons per $Km^2$.

It is striking to note that about 54% tahsils of the region noted nutritional density more than the region. It can be, therefore, asserted that the pressure of population on the food cropped area is high. It seems that if the

population will rise continuously according to previous trends in these tahsils, an over-pressure on the food cropped area must be expected and it will cause the food problem in the area.

POPULATION STRUCTURE :

Rural-Urban Composition :

The region is predominantly agricultural. The proportion of rural population to total population is, therefore, very high everywhere (Fig. 4.4).(Table 4.3) reveals that the region has 80.90 percent rural population amd 19.10 percent urban population. It is interesting to note that only Jhansi tahsil of the region registered 33.67% of total population as rural. The highest percentage of rural population has been recorded by tahsil Baberu (98.30) followed by Mahrauni (96.50%), Kulpahar (94.16%), Mau (92.88%), Talbehat (92.15%) and Maudaha (91.27%). Other tahsils have more than three fourth of the total population as rural population. In fact the region has recently felt the impact of urban culture in the modern sense. Rugged surface covered with wide spread forests, infertile soils, poor means of transportation, lack of industrialisation and other several factors prevented urban evolution in the region. However in the prevailing conditions, urban population grew up by and large year by year. It is also remarkable fact that the drifting of rural population to urban areas has been noticed in the

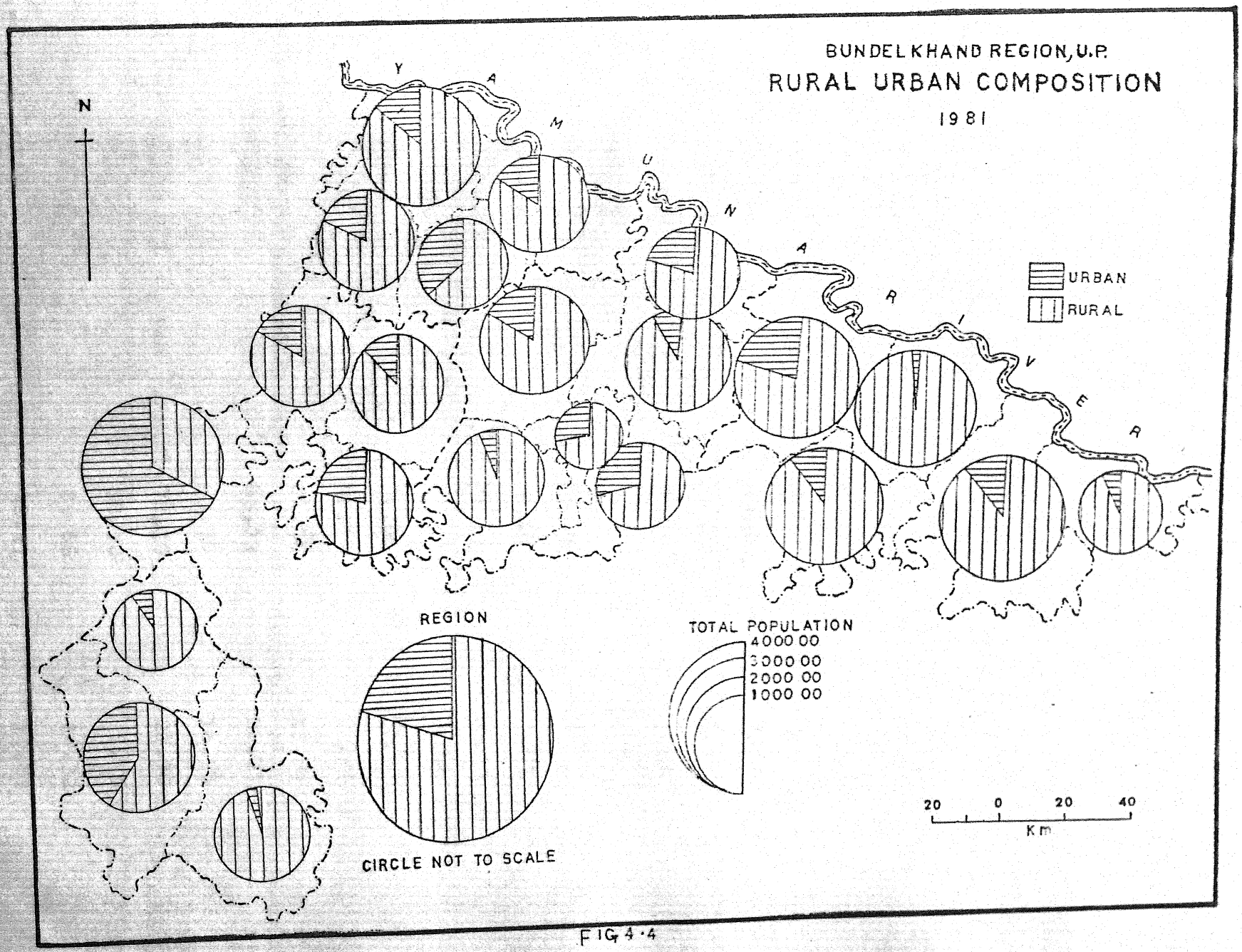
BUNDELKHAND REGION, U.P.
RURAL URBAN COMPOSITION
1981
N
YAMUNA
CHAMBAL
URBAN
RURAL
REGION
TOTAL POPULATION
4000 00
3000 00
2000 00
1000 00
CIRCLE NOT TO SCALE
20 0 20 40
Km

FIG 4·4

Table 4.3 : Rural-Urban Composition of Population in the Region (1981).

| Tahsils/Region | Percentage of | |
|---|---|---|
| | Rural Population | Urban population |
| Moth | 83.71 | 16.29 |
| Garautha | 87.39 | 12.61 |
| Mauranipur | 78.28 | 21.72 |
| Jhansi | 33.67 | 66.33 |
| Talbehat | 92.51 | 7.49 |
| Lalitpur | 73.41 | 26.59 |
| Mahrauni | 96.50 | 3.50 |
| Hamirpur | 79.27 | 20.73 |
| Rath | 83.54 | 16.46 |
| Kulpahar | 94.16 | 5.84 |
| Charkhari | 71.73 | 28.27 |
| Maudaha | 91.27 | 8.73 |
| Mahoba | 71.00 | 29.00 |
| Jalaun | 86.16 | 13.84 |
| Konch | 86.04 | 13.06 |
| Orai | 63.23 | 36.77 |
| Kalpi | 83.75 | 16.25 |
| Banda | 78.30 | 21.70 |
| Baberu | 98.30 | 1.70 |
| Naraini | 89.68 | 10.32 |
| Karwi | 89.11 | 10.89 |
| Mau | 92.88 | 7.12 |
| Region | 80.10 | 19.90 |

region as is the case with different parts of country[11].

The discussion made in foregoing lines reveals that the tahsils of Jhansi and Jalaun districts are more urbanised than other tahsils of Hamirpur, Banda and Lalitpur districts. It is only owing to the presence of big towns and availability of relatively better transport facilities there.

Sex-Ratio :

Sex-ratio is one of the important biological aspects of population composition. Many socio-economic problems of a society are closely related to the balance or disparity between male and female. Moreover, it decides the socio-economic development of an area and therefore useful tool for regional analysis of population characteristics[12]. With this view, the sex-ratio is discussed here as the number of females per 1000 males.

According to census of 1981, the sex ratio of the region is 858 (Table 4.4) which is lower than that of the State (886).

Table 4.4 : Sex-ratio in the Region (1981) :

| Tahsil/Region | Sex-ratio | Tahsil/Region | Sex-ratio |
|---|---|---|---|
| Moth | 861 | Mahoba | 860 |
| Garautha | 859 | Jalaun | 841 |
| Mauranipur | 875 | Konch | 832 |
| Jhansi | 871 | Orai | 831 |
| Talbehat | 836 | Kalpi | 847 |
| Lalitpur | 857 | Banda | 849 |
| Mahrauni | 865 | Baberu | 867 |
| Hamirpur | 844 | Naraini | 861 |
| Rath | 860 | Karwi | 879 |
| Kulpahar | 861 | Mau | 873 |
| Charkhari | 864 | | |
| Maudaha | 852 | Region | 858 |

It is evident from the table that most of the tahsils of the region have high sex-ratio in comparison to the region. The high sex-ratio is found in Karwi (879) followed by Mauranipur (875), Mau (873), Jhansi (871), Baberu (867) Charkhari (864), Narini (861), Kulpahar (861), Moth (861), Mahoba (860) and Rath (860) tahsils. In the remaining tahsils, it is below 860. The lowest sex-ratio is noticed in Orai tahsil (831). Females' condition is deteriorating in the region which may be noticed in every part due to

hot climate, child-marriage consequently early motherhood, lack of education particularly in females, insufficient nutrition and medical facilities, Malpractice, domestic burden as well as conservative look of Hindu society.

The deficiency of females is a social hazard to the region. Indeed, it creates a variety of crimes and social disorder. Therefore due attention should be paid towards females, especially in early ages to have balanced population. It is a good sign that the traditional attitudes and agelong conditions are changing remarkably in present days and the need for social equality of male-female is increasingly felt. It can be expected that in the coming years the situation will change greatly and with the spread of education, medical facilities and family planning etc an achievement of near sex-balance is likely to be met. Such a balance is welcome in any society for the healthy life for both male and female communities and to enrich social level of the region.

Occupational Structure :

The occupational pattern of an area unfolds its diverse economic, demographic and cultural attributes and provides a background for formulating the plans for the socio-economic development. Besides, it reveals the pattern of livelihood of the people and economic acitivies which absorb the bulk of the people[13].

Working Force :

Trichotomy of main workers, marginal workers and non-workers has been adopted in the 1981 census. The person who works physically or mentally in activity, is called worker. Work involves not only actual work but also effective supervision and direction of work also. The concentration of working force in an area is characterised by socio-economic and demographic factors[14]. A large working force results in high production and consequent economic betterment. The proportion of working population to total population is however very low in the region (Fig. 4.5).

The table 4.5 represents that only 30.73 percent of total population is working population which is slightly greater than that of the State (29.22%). The highest proportion of working populatiom to total population is marked in Mau Tahsil (40.13%) followed by Karwi (35.62%), Naraini (33.66%), Baberu (32.84%), Rath (32.66%), Kulpahar (32.15%), Charkhari (31.56%) and Lalitpur (31.41%) tahsils. In remaining tahsils, it is recorded between 27 to 31 percent. Low proportion of total workers to total population in the region is due to the lack of industrialisation and employment opportunities.

Males and Females both constitute the main working

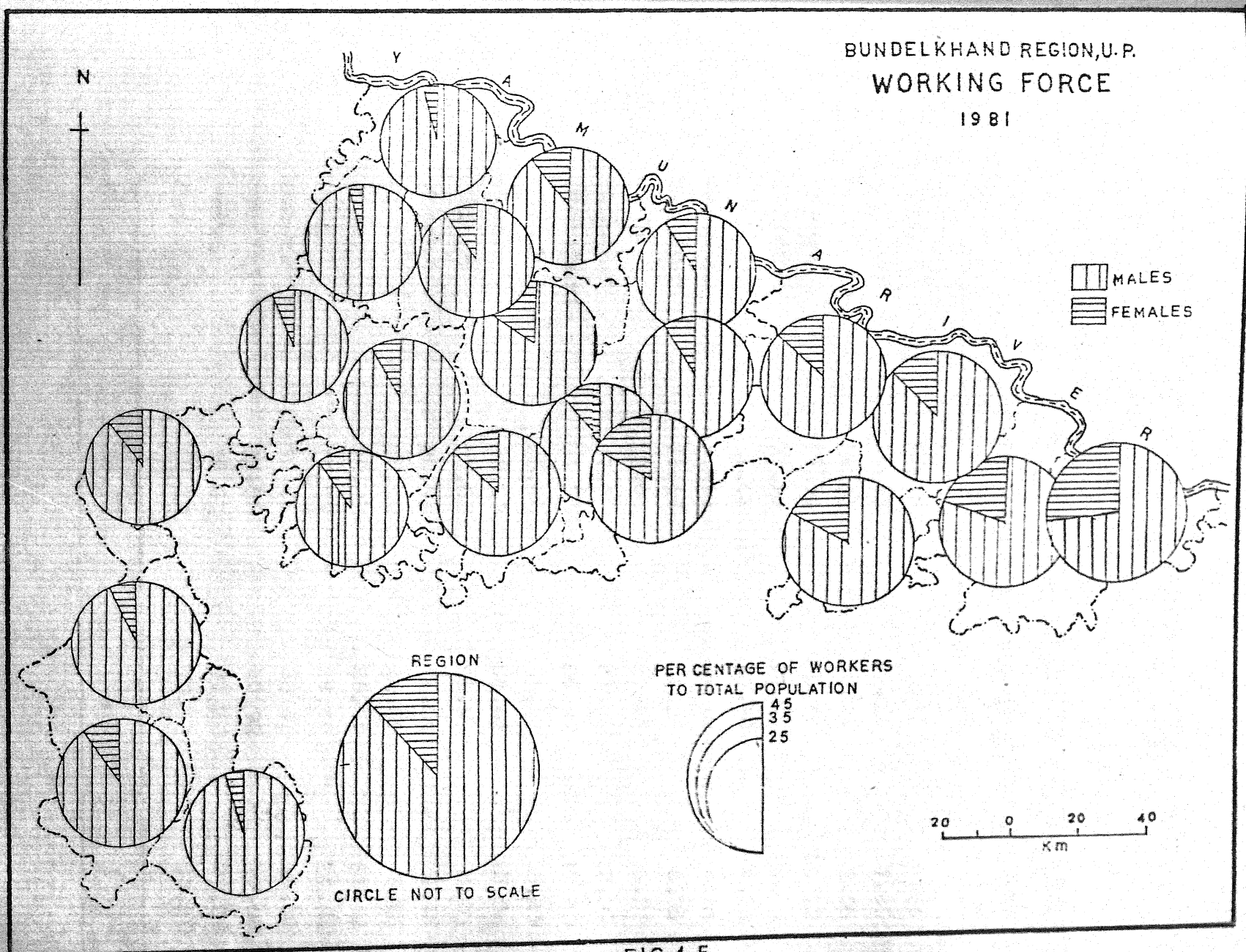
BUNDELKHAND REGION, U.P.
WORKING FORCE
1981
N
YAMUNA
ARIVER
MALES
FEMALES
REGION
CIRCLE NOT TO SCALE
PER CENTAGE OF WORKERS
TO TOTAL POPULATION
45
35
25
20 0 20 40
Km

FIG.4.5

Table 4.5 : Main Workers in the Region (1981).

| Tahsils/Region | Percentage of | | |
|---|---|---|---|
| | Workers to total population | Male workers to total workers | Female workers to total workers |
| Moth | 27.69 | 93.36 | 6.64 |
| Garautha | 28.63 | 92.15 | 7.85 |
| Mauranipur | 28.33 | 90.95 | 9.05 |
| Jhansi | 27.54 | 89.78 | 10.22 |
| Talbehat | 33.24 | 93.55 | 6.45 |
| Lalitpur | 31.41 | 90.80 | 9.20 |
| Mahrauni | 30.91 | 95.39 | 4.61 |
| Hamirpur | 28.48 | 91.25 | 8.75 |
| Rath | 32.66 | 83.42 | 16.58 |
| Kulpahar | 32.15 | 87.03 | 12.97 |
| Charkhari | 31.56 | 86.37 | 13.63 |
| Maudaha | 29.44 | 90.91 | 9.19 |
| Mahoba | 33.12 | 84.46 | 15.54 |
| Jalaun | 27.62 | 95.99 | 4.01 |
| Konch | 28.16 | 95.54 | 4.46 |
| Orai | 28.10 | 90.55 | 9.45 |
| Kalpi | 30.37 | 88.98 | 11.02 |
| Banda | 29.77 | 87.06 | 12.94 |
| Baberu | 32:84 | 83.44 | 16.56 |
| Naraini | 33.66 | 82.92 | 17.08 |
| Karwi | 35.62 | 80.00 | 20.00 |
| Mau | 40.13 | 72.81 | 27.10 |
| Region | 30.73 | 88.02 | 11.98 |

force of the region but out of total workers 88.02% are male workers. The highest proportion of male workers is recorded in Jalaun tahsil (95.99%) followed by Konch (95.54), Mahrauni (95.39%), Talbehat (93.55%), Moth (93.36%), Garautha (92.15%), Hamirpur (91.25%), Mauranipur (90.95%), Maudaha (90.91%), Lalitpur (90.80%), and Orai (90.55%) tahsils. In the remaining tahsils except Mau (72.81%),it is between 80 and 90 percent.

The proportion of female workers to total workers is very low (11.98%) in the region. The highest proportion of female workers is noticed in Mau (27.19%) followed by Karwi (20.00%), Naraini (17.08%) Rath (16.58%), Baberu (16.56%) and Mahoba (15.54%) tahsils. In other tahsils of the region, it varies from 4.01% (Jalaun) to 13.63% (Charkhari).

Concludingly, it can be remarked that the higher proportion of male workers is due to the fact that the earning of bread, even today, is primarily the responsibility of males. Moreover, illiteracy in women, rigid attitudes of the society towards female employment, old religious norms and the low mentality of females about seeking the job opportunities are the responsible factors for the low participation of females in work. To reveal the economic characteristics of working force, the

analysis of workers by occupations is given in the following lines :

Agricultural Workers :

A huge proportion of the total workers is engaged in agricultural activities (Fig. 4.6A & B). The rapid growth of population as well as lack of employment opportunities are the responsible factors for higher concentration of workers in agricultural occupation[15]. Agricultural workers include the cultivators and agricultural labourers who are directly associated with agriculture. Out of total workers 57.26% are cultivators and 21.18% are agricultural labourers in the region (Table 4.6).

The highest proportion of the cultivators to total workers is recorded by Mahrauni tahsil (79.70%) followed by Talbehat (73.24%), Moth (67.56%), Garautha (65.71%) Mau (64.98%), Jalaun (63.73%), Baberu (63.05%), Naraini (62.25%) and Karwi (61.83%) tahsils. In the remaining tahsils of the region, it is between 28 to 61%. The lower proportion is recorded by Jhansi tahsil. But the percentage of agricultural labourers is the highest in Maudaha (30.55%) tahsil followed by Baberu (29.41%), Rath (28.81%), Mahoba (28.12%), Charkhari (27.76%), Kulpahar (27.09%), Banda (26.93%), Hamirpur (25.59%) and Naraini (25.58%) tahsils. It is recorded below 25% in the remaining tahsils of the region.

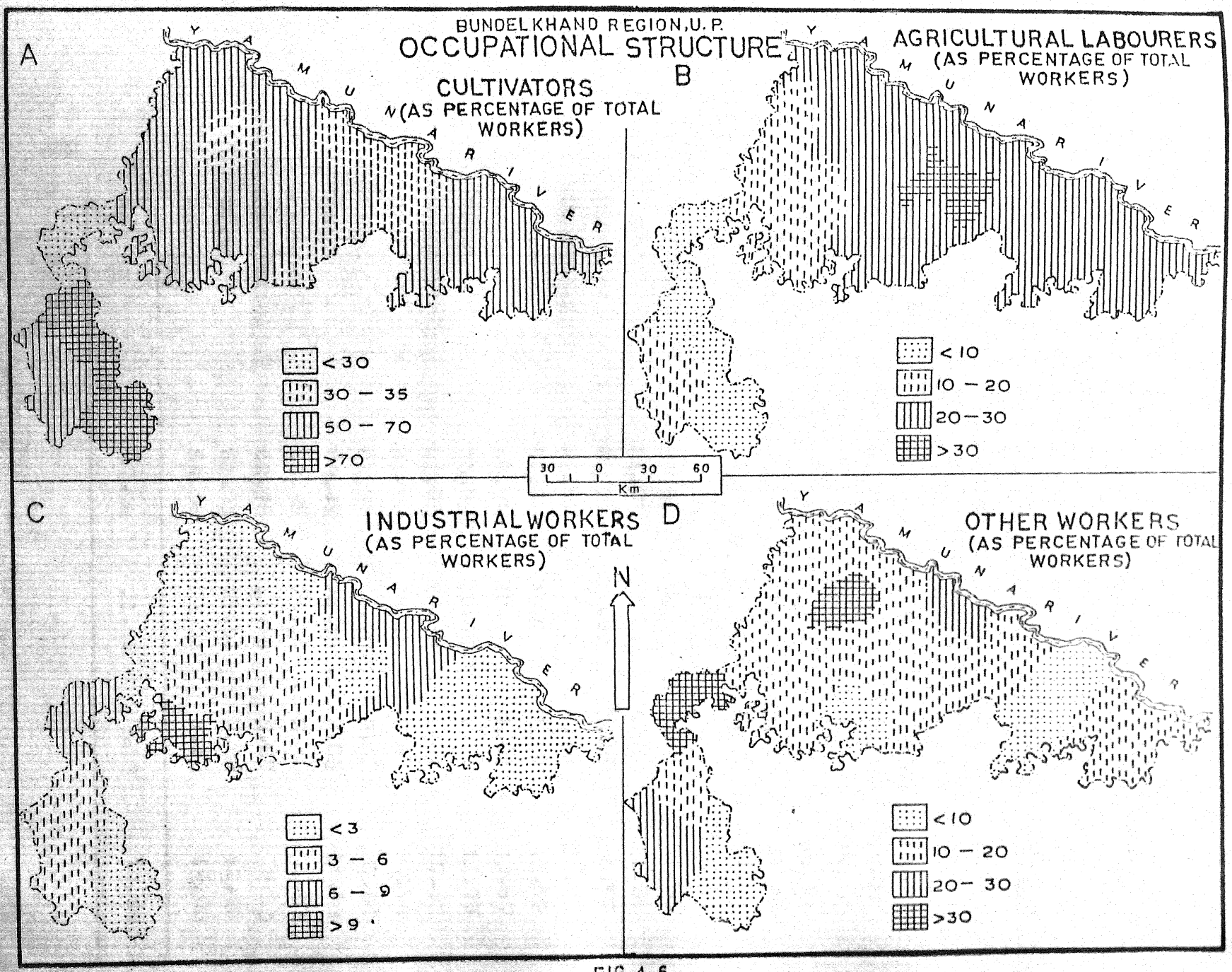
BUNDELKHAND REGION, U.P.
OCCUPATIONAL STRUCTURE
A
CULTIVATORS
(AS PERCENTAGE OF TOTAL WORKERS)
YAMUNA RIVER
< 30
30 – 35
50 – 70
>70
B
AGRICULTURAL LABOURERS
(AS PERCENTAGE OF TOTAL WORKERS)
< 10
10 – 20
20–30
>30
30 0 30 60
Km
C
INDUSTRIAL WORKERS
(AS PERCENTAGE OF TOTAL WORKERS)
N
< 3
3 – 6
6 – 9
> 9
D
OTHER WORKERS
(AS PERCENTAGE OF TOTAL WORKERS)
< 10
10 – 20
20– 30
>30

FIG. 4.6

Table 4.6 : Occupational Structure of Population in the Region (1981).

| Tahsils/Region | As percentage of total workers | | | |
|---|---|---|---|---|
| | Cultivators | Agricultural labourers | Industrial workers | Other workers |
| Moth | 67.56 | 16.64 | 2.11 | 13.69 |
| Garautha | 65.71 | 19.20 | 3.83 | 11.25 |
| Mauranipur | 57.11 | 11.82 | 9.19 | 16.88 |
| Jhansi | 27.67 | 5.26 | 6.78 | 60.29 |
| Talbehat | 73.24 | 7.71 | 3.11 | 15.94 |
| Lalitpur | 58.22 | 12.04 | 5.12 | 24.62 |
| Mahrauni | 79.70 | 9.69 | 2.18 | 8.43 |
| Hamirpur | 49.92 | 25.59 | 3.60 | 20.89 |
| Rath | 54.57 | 28.81 | 4.76 | 11.86 |
| Kulpahar | 60.52 | 27.09 | 3.82 | 8.57 |
| Charkhari | 51.57 | 27.76 | 4.88 | 15.79 |
| Maudaha | 54.51 | 30.55 | 2.39 | 12.55 |
| Mahoba | 48.29 | 28.12 | 4.02 | 19.57 |
| Jalaun | 63.73 | 20.44 | 2.08 | 13.75 |
| Konch | 60.51 | 18.89 | 2.67 | 17.93 |
| Orai | 46.10 | 20.85 | 2.42 | 30.63 |
| Kalpi | 61.51 | 20.20 | 2.35 | 15.94 |
| Banda | 49.41 | 26.93 | 7.83 | 15.83 |
| Baberu | 63.05 | 29.41 | 2.41 | 5.13 |
| Naraini | 62.25 | 25.58 | 2.87 | 9.30 |
| Karwi | 61.83 | 23.94 | 2.07 | 12.16 |
| Mau | 64.98 | 23.33 | 1.63 | 10.06 |
| Region | 57.26 | 21.18 | 3.59 | 17.97 |

It is to note that 92.05% of the total cultivators are males and 7.95% are females in the region. While out of the total agricultural labourers 74.00% and 26.00% are males and females respectively. Low participation of females in agricultural occupation is due to the various social constraints and more pressing need of females at home.

Industrial Workers :

The lack of exploitation of raw materials has resulted in low industrial workers in the region (Fig.4.6C). Out of total workers, 3.59% are industrial workers and out of total industrial workers, 84.69% are males and 15.31% are females (Table 4.6). In all tahsils of the region, Mauranipur (9.19%), Banda (7.83%), Jhansi (6.77%), Lalitpur (5.12%) and Charkhari (4.88%) tahsils are showing high percentage of industrial workers and in remaining tahsils, it is between 2 to 4 percent except Mau (1.67%) tahsil. Unexploited physical resources, agrarian base economy, unskilled labour, low capital and probably the backwardness of the region since beginning are the responsible factors for low participation of the workers in manufacturing, but during the last decade, government has paid much attention to develop the backward areas industrially, which will surely bring an acceleration in industrial sector.

Other workers :

As like industrial workers, the proportion of other workers to total workers is also low in the region (Fig. 4.6D). Out of total workers, 17.97% are engaged in other activities in the region. There are mainly seven tahsils : Jhansi, Orai, Lalitpur, Hamirpur, Mahoba, Banda and Konch showing higher percentage of other workers as 60.29, 30.63, 24.62, 20.88, 19.57, 19.48 and 17.93 respectively than regional average. In the remaining tahsils, it is found with moderate variation between 8 to 16 percent. The lowest percentage is recorded by Baberu (5.12%) tahsil.

Age-Structure :

Age-structure is one of the most important aspects of population characteristics. It affects not only the population growth but also the socio-economic activities of a region[16]. The age-structure of population is basically determined by fertility, mortality and mobility which are closely associated with each other. Moreover, natural calamities, war, and population policies are also responsible factors which affect it. Therefore, the discussion of age-structure of population is necessary to highlight the other attributes associated with population. The discussion is based on census 1971

due to unavailability of recent data. The age-groups of the census have been conveniently arranged into four categories as follows :-

(i) 0-19 (young)
(ii) 20-39 (Adult)
(iii) 40-59 (Matured)
(iv) 60 + (Old).

Table 4.7 shows the age structure of population of the region.

Table 4.7 : Age structure of Population in the Region (1971)

| Age-groups | Percent of total population | Male % | Female % |
|---|---|---|---|
| Jhansi district including Lalitpur District | | | |
| 0-19 | 51.23 | 28.00 | 23.23 |
| 20-39 | 27.19 | 14.24 | 12.95 |
| 60 + | 5.19 | 3.08 | 2.11 |
| Total | 100.00 | 53.45 | 46.55 |
| Jalaun District | | | |
| 0-19 | 51.27 | 28.06 | 23.21 |
| 20-39 | 27.29 | 14.04 | 13.25 |
| 40-59 | 15.97 | 8.83 | 7.14 |
| 60 + | 5.47 | 2.90 | 2.57 |
| Total | 100.00 | 53.83 | 46.17 |

Table 4.7 (contd.)

| | | | |
|---|---|---|---|
| Hamirpur District | | | |
| 0-19 | 50.79 | 27.64 | 23.15 |
| 20-39 | 26.42 | 13.48 | 12.94 |
| 40-59 | 16.74 | 8.99 | 7.75 |
| 60 + | 6.05 | 3.17 | 2.88 |
| Total | 100.00 | 53.28 | 46.72 |
| Region | | | |
| 0-19 | 50.83 | 27.96 | 23.14 |
| 20-39 | 27.29 | 14.19 | 13.10 |
| 40-59 | 16.20 | 8.84 | 7.36 |
| 60 + | 5.68 | 3.00 | 2.68 |
| Total | 100.00 | 53.72 | 46.28 |

It is evident from the table that out of total population 50.83% is young population in the region. The percentage of young population to total population is 51.79% in Banda district (Males 27.37%, Females 24.42%), 51.27% in Jalaun district (Males 28.06%, Females 23.21%), 51.23% in Jhansi district (Males 28.00%, Females 23.23%) and 50.79% in Hamirpur district (Males 27.64%, Females 23.15%). It is interesting to disclose that all the districts of the region have high percentage of young population in comparision to the region (50.83%) as well as the State ( 49.85% ). The percentage

of adult population to total population is 27.29 in the region which is lower than that of the State (27.35%). Banda district has recorded highest percentage of adult population (27.42%) of which 14.30% are males and 13.12% females while in Jalaun, it is 27.29% (14.04% males and 13.25% females), in Jhansi 27.19% (14.24% males and 12.95% females) and in Hamirpur 26.42% (13.48% males and 12.94% females).

Obviously, it may be said that the highest and the lowest percentage of adult population are found in Banda and Hamirpur districts respectively. It is also significant to point here that only Banda district has high percentage of young people in comparison to the State 27.35%.

Age-group of third category i.e. matured population consists of 16.20% of total population (8.84% males and 7.36% Females) in the region, which is slightly lower than that of the State (16.06%). In Hamirpur district the percentage of matured population is 16.74% (8.99% males and 7.75% Females) which is the highest in the region. While in Jhansi district, it is 16.06% (8.56% Males and 7.50% females), in Jalaun 15.77% (8.83% Males and 7.14 Females) and in Banda 15.60% (8.7% Males and 6.90% Females). It is clear that only Hamirpur and Jhansi districts have high percentage of matured population

in comparision to the State.

The category of old population consists of 5.68% (3.00% Males and 2.68% Females) of total population in the region. The figure is lower than that of the State (6.76%). In Hamirpur district the percentage of old population to total population is 6.05 (3.17% Males and 2.88% Females). Jhansi district records 5.62% of total population in this category, of which 2.77% are Males and 2.75% Females. While in Jalaun district it is 5.47% of total population (2.90% Males and 2.57% Females). Banda district records 5.19% of old population comprising of 3.08% Males and 2.11% Females. It is significant to point here that all the districts of the region have low percentage of population in this age group in comparision to the State.

Religious Structure :

Religion is another important characteristics of population. In fact, religion and castes both provide fundamental base to organise the society. Not much so, they also affect social, economic and political structure of the society. Therefore, the study of religious structure assume paramount significance in cultural studies. To analyse the religious characteristics of population, figures of 1971 census have been used in paucity of recent data. The religious structure is given in table 4.8.

Table 4.8 : Religious Structure of Population in the Region (1971).

| Tahsils/Region | Percentage of the total population | | |
|---|---|---|---|
| | Hindus | Muslims | Others |
| Moth | 95.50 | 4.20 | 0.30 |
| Garautha | 96.06 | 3.5 | 0.44 |
| Mauranipur | 95.2 | 4.2 | 0.60 |
| Jhansi | 87.0 | 10.1 | 2.90 |
| Lalitpur | 93.20 | 2.9 | 3.90 |
| Mahrauni | 95.9 | 1.5 | 2.60 |
| Hamirpur | 95.0 | 4.1 | 0.90 |
| Rath | 93.4 | 5.8 | 0.80 |
| Charkhari | 93.7 | 6.0 | 0.30 |
| Maudaha | 90.1 | 9.7 | 0.20 |
| Mahoba | 93.7 | 6.0 | 0.30 |
| Jalaun | 93.5 | 5.9 | 0.60 |
| Konch | 92.7 | 7.1 | 0.20 |
| Orai | 87.3 | 11.4 | 1.30 |
| Kalpi | 89.8 | 10.1 | 0.10 |
| Banda | 89.8 | 9.8 | 0.40 |
| Baberu | 94.60 | 4.8 | 0.60 |
| Naraini | 93.8 | 6.0 | 0.20 |
| Karwi | 96.2 | 3.3 | 0.50 |
| Mau | 96.9 | 2.6 | 0.50 |
| Region | 93.60 | 6.20 | 0.20 |

It is evident from the table that the region is dominated by the Hindus as the percentage of Hindus to total population is 93.60 which is higher than the figure of State (83.76%). Out of 20 tahsils of the region, there are six tahsils; Moth, Garautha, Mauranipur, Mahrauni, Karwi and Mau where 95 to 97 percent of total population are Hindus. In ten tahsils of the region, Hindus are between 90 and 95 percent of total population. The remaining tahsils have Hindus between 85 to 90 percent.

Above discussion leads to conclude that all tahsils of the region are Hindu dominated. It is due to the occupance of Hindu Kings (Rajputs and Chandelas) in the region from the very beginning.

Muslims stand next to Hindus in the region. They form 6.20 percent of total population which is lower than that of the State (15.50%). The highest percentage of Muslims is noted in Orai tahsil (11.4%) followed by Jhansi and Kalpi each (10.1%), Maudaha (9.7%), Banda (9.8%), Garautha (8.5%) and Konch (7.1%) Tahsils. Naraini, Mahoba, Charkhari, Rath, and Jalaun tahsils have recorded Muslims population between 5 to 7% and the remaining tahsils below 5 percent. The main causes responsible for the low share of Muslim population are that the muslim rulers could not establish their rule for long in the region. All the Muslim population which settled here in the Muslim period,

would have migrated to the areas inhabited by the people of their own religion, caste and profession.

Besides these two communities, Jains, Christians and Buddhists are also found in the different parts of the region but their proportions are negligible. Jains in Garautha, Mauranipur, Lalitpur and Mahrauni tahsils, the Sikhs in Jhansi, Buddhists in Jalaun are much in number.

Literacy :

Literacy is one of the most important factors influencing the overall development of a region. The high level of literacy relfects the socio-economic development of an area concerned. Therefore, literacy is known as switch-board of socio-economic development in an area. Keeping this view in mind, literacy of the region has been analysed here. According to 1981 census, 28.69% (41.52% Males and 17.31% Females) of total population are literates in the study area (Table 4.9) which indicates the backwardness of the area, as the figure is low in comparision to the figure of the country (36.17%). However the regional figure is more or less, requalr to the state figure (27.40%). Spatially the level of literacy varies significantly from one area to another (Fig. 4.7A). The highest level of literacy is found in Jhansi tahsil (43.95%) followed by Orai (42.49%), Jalaun (36.12%), Moth (33.79%) and Garautha (31.50%).

Table 4.9 : Literacy of Population in the Region (1981).

| Tahsils/Region | Literates Population as percentage of total population | Male literates as percentage of total male population | Female Literates as percentage of total Females population |
|---|---|---|---|
| Moth | 33.79 | 50.15 | 14.79 |
| Garautha | 31.50 | 46.96 | 13.49 |
| Mauranipur | 29.34 | 42.80 | 13.94 |
| Jhansi | 43.95 | 55.57 | 30.61 |
| Talbehat | 17.80 | 26.76 | 7.08 |
| Lalitpur | 25.21 | 35.70 | 13.07 |
| Mahrauni | 17.87 | 27.54 | 6.69 |
| Hamirpur | 29.39 | 41.87 | 14.61 |
| Rath | 26.34 | 40.18 | 10.25 |
| Kulpahar | 22.05 | 34.00 | 8.17 |
| Charkhari | 25.82 | 38.10 | 11.61 |
| Maudaha | 27.10 | 40.29 | 11.61 |
| Mahoba | 26.30 | 37.50 | 13.27 |
| Jalaun | 36.12 | 50.63 | 18.87 |
| Konch | 37.45 | 52.64 | 19.20 |
| Orai | 42.49 | 56.47 | 25.68 |
| Kalpi | 27.89 | 40.89 | 12.56 |
| Banda | 29.79 | 42.50 | 14.81 |
| Baberu | 20.04 | 33.04 | 5.05 |
| Naraini | 22.19 | 34.31 | 8.12 |
| Karwi | 20.84 | 33.16 | 6.83 |
| Mau | 20.34 | 33.39 | 6.24 |
| Region | 28.69 | 41.52 | 17.31 |

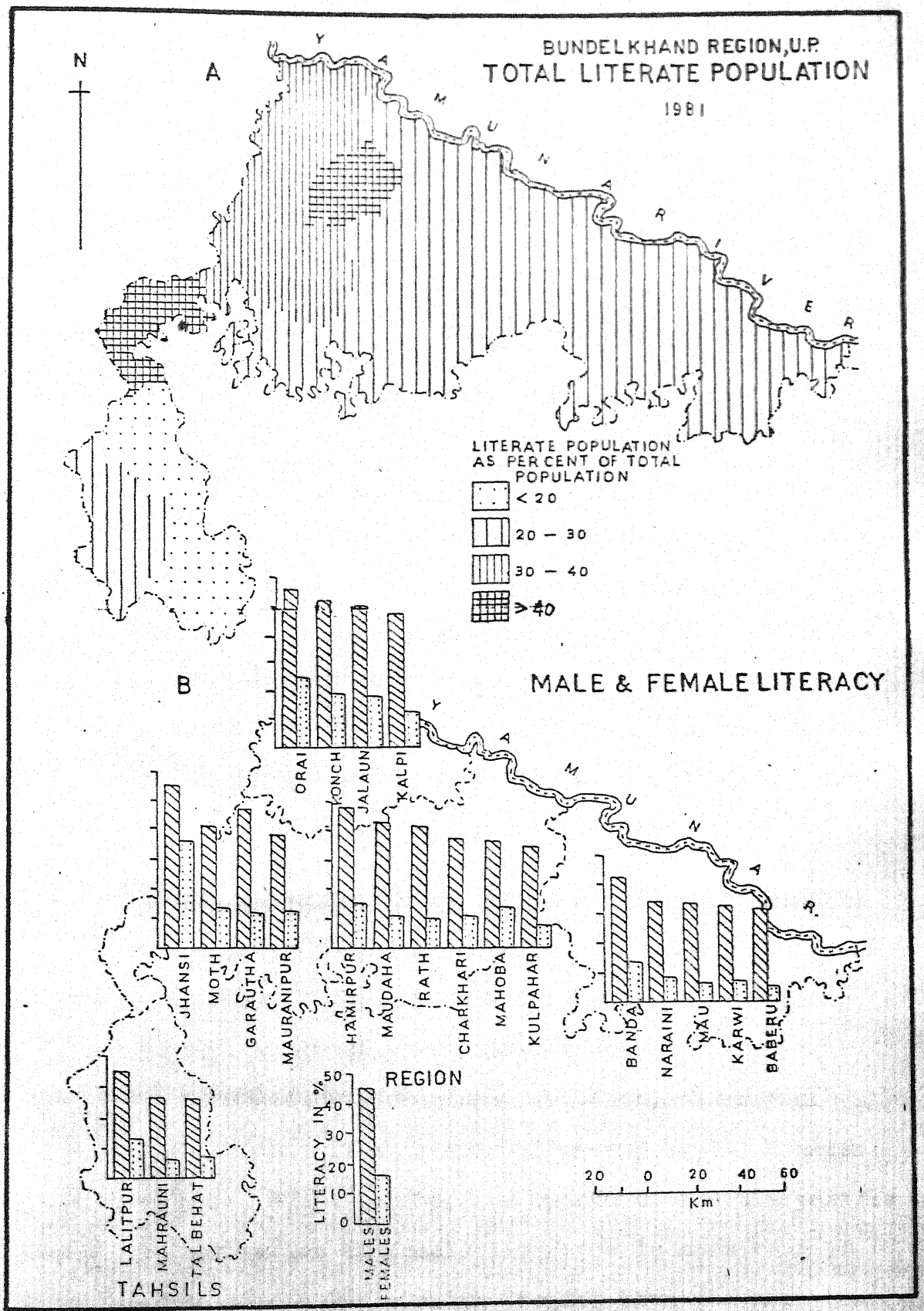
BUNDELKHAND REGION, U.P.
TOTAL LITERATE POPULATION
1981
A
N
YAMUNA RIVER
LITERATE POPULATION AS PERCENT OF TOTAL POPULATION
< 20
20 – 30
30 – 40
> 40
B
MALE & FEMALE LITERACY
ORAI
KONCH
JALAUN
KALPI
JHANSI
MOTH
GARAUTHA
MAURANIPUR
HAMIRPUR
MAUDAHA
RATH
CHARKHARI
MAHOBA
KULPAHAR
BANDA
NARAINI
MAU
KARWI
BABERU
REGION
LALITPUR
MAHRAUNI
TALBEHAT
TAHSILS
LITERACY IN %
50
40
30
20
10
0
MALES
FEMALES
20 0 20 40 60
Km

FIG.4.7

In the remaining tahsils, it is recorded between 17 to 30 percent of total population.

Literacy is male dominated in the region (Fig. 4.7B). The percentage of male literates to total males is 41.52% in the region. The highest percentage of male literates to total males is 56.47 in Orai tahsil followed by Jhansi (55.57%), Konch (52.64%), Jalaun (50.63%), Moth (50.15%), Garautha (46.96%), Banda (42.50%), Hamirpur (41.87%) and Mauranipur (42.80%) tahsils. There is eleven tahsils namely Kalpi, Maudaha, Rath, Mahoba, Charkhari, Lalitpur, Naraini, Kulpahar, Karwi, Mau and Baberu which have male literacy between 33 to 41 percent. Mahrauni and Talbehat are only two tahsils which have 27.54% and 26.76% literate males respectively in the region.

The percentage of female literates to total females is 17.31 in the study region. The highest level of female literacy is found in Jhansi tahsil (30.61%), followed by Orai (25.68%), Konch (19.20%), Jalaun (18.87%), Banda (14.81%), Moth (14.79%), Hamirpur (14.61%), Mauranipur (13.94%), Garautha (13.49%) and Lalitpur (13.07%) tahsils. Kalpi, Maudaha, Rath, Mahoba, and Charkhari are the tahsils where the percentage of female literates is more than 10 and the remaining tahsils of the region have not more than 8 percent. The lowest percentage is noted by Mau tahsil (6.24%).

Concludingly, it can be said that the factors which are responsible for negligible proportion of female literates are backwardness, traditional ideas, less interest towards female education etc.

Population Projection :

An estimate of future population of a region becomes necessary as it greatly helps in planning for future. Various techniques have been devised by the demographers to predict the future size of population for better economic and social planning. But since population growth is the outcome of general complex processes operating in a region, no method can claim cent per cent success. However, an attempt is made here to project future population on two assumptions-

(i) That the relative rate of population increase calculated by the formula -

$$r = \frac{P_2 - P1/T) \times 100}{P_2 + P1}$$

Where, r = The rate of change

P1=The Population size at one point

P2=The population size at other point

T = The Numbers of years between P1 and P2 will continue in future.

(ii) That the population grows similarly as an amount grows at the rate of compound interest, calculated by the formula :

$$A = P \left( 1 + \left( \frac{r}{100} \right)^n \right.$$

A = For projected population

P = Present population

r = Annual growth rate of population

n = Number of years between P1 and P2

The results derived on the basis of above mentioned formula are given in table (4.10) and the projected population has been shown graphically in map (Fig. 4.1).

The peresent population of the region 54.38 lakh is expected to increase to 60.73 Lakh, 60.78 Lakh and 75.75 Lakh in 1991, 2001 and 2011 respectively. This will undoubtedly put enormous pressure on the resources of the region slowing down the pace of economic progress and more immigration to the urban centres.

Considering the pressure of population on the region, social awakening with industrial and agricultural development is needed for self sufficiency of the region. The beginning of crash programme for the expansion of agricultural output, the provision of roads, schools, hospitals and industrialisation as well as urbanisation are the rational solution to balance the population pressure.

Table 4.10 : Projection of Population in the Region.

| Tahsils/Region | Population in Lakhs | | | |
|---|---|---|---|---|
| | 1981 | 1991 | 2001 | 2011 |
| Moth | 2.17 | 2.49 | 2.86 | 3.28 |
| Garautha | 2.09 | 2.36 | 2.66 | 2.99 |
| Mauranipur | 2.31 | 2.45 | 2.69 | 2.90 |
| Jhansi | 4.74 | 5.34 | 6.14 | 6.99 |
| Talbehat | 1.55 | .. | .. | .. |
| Lalitpur | 2.37 | 3.17 | 3.37 | 3.58 |
| Mahrauni | 1.93 | 2.07 | 2.23 | 2.38 |
| Hamirpur | 2.07 | 2.34 | 2.64 | 2.97 |
| Rath | 2.68 | 2.90 | 3.13 | 3.37 |
| Kulpahar | 1.97 | - | - | - |
| Charkhari | 1.04 | - | - | - |
| Maudaha | 2.49 | 2.81 | 3.77 | 3.86 |
| Mahoba | 1.65 | 1.67 | 1.69 | 1.70 |
| Jalaun | 3.48 | 3.79 | 4.13 | 4.50 |
| Konch | 2.23 | 2.43 | 2.65 | 2.88 |
| Orai | 1.96 | 2.23 | 2.53 | 2.87 |
| Kalpi | 2.19 | 2.47 | 2.78 | 3.14 |
| Banda | 3.67 | 3.97 | 4.30 | 4.65 |
| Baberu | 3.56 | 3.89 | 4.24 | 3.63 |
| Naraini | 3.25 | 3.54 | 3.87 | 4.38 |
| Karwi | 3.43 | 3.97 | 4.60 | 5.33 |
| Mau | 1.45 | 1.56 | 1.72 | 1.87 |
| Region | 54.38 | 60.73 | 60.78 | 75.75 |

N.B. The population of Charkhari, Kulpahar and Talbehat tahsils could not be projected due to reorganisation of administrative units in 1981.

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## CHAPTER V

## DYNAMICS OF LAND-USE AND CROPPING PATTERN

Agricultural land-use plays strategic role in determination of socio-economic and cultural development of the region. Therefore the development of agriculture is a prime need to strengthen the regional economy. Agricultural economy can not be improved untill the detailed study of agricultural characteristics is made. With this view in mind, dynamics of land-use and cropping pattern have been discussed in this chapter.

### Evolution of Land-use :

In seeking his livelihood, man has been influenced not only by the physical environment but also by that culture with which he has been associated[1]. Man has been related to the land since beginning. Many political, cultural and economic ups and downs had been marked in the region in the past, therefore, changes in land-use also took place accordingly. Inthe past, man was totally unknown to agriculture as well as animal husbandary which became principal sources of livelihood later on. It is estimated that agriculture began in the prehistoric times with the development of Aryan civilization and gradually it became main occupation of people later on. Although the scant archaeological and literary materials do not

allow to know about the detailed land-use of the region, some vague idea can be worked out from the valuable treasure of vedic literature and certain other associated records.

During the region of Mauryas, Sungas, Nagas and Guptas, the land was distributed to the individuals and it would have been cultivated by the land-owners and also by hired labours. There is no evidence to show any organised attempt made by the state for irrigation. Tanks and wells were the sources of irrigation. During Rajput period, attention was paid for proper land utilisation. Forested land was recovered for agricultural use. The Rajputs paid keen interest to construct tanks, embankments like Kiratsagar, Madansagar, Baruasagar etc. for irrigation purposes[2]. Thus the number as well as size of land holding increased. In the Muslim period, land meant for only increasing the government treasure. After some time, it became the cause of existence of the small estates. In the Akbar's reign, the position of the farmers was static due to generous policy of land tax fixation. Forests and barren lands were cleaned and agriculture was encouraged butit did not remain for long time. On account of rigidity in taxation, agriculture was performed only on fertile land in the later muslim period. During supremacy of the Britishers, although efforts have been made to progress the agriculture,the land and farmers were in hot waters because of pressing appliance of an estate and landlord.

Irregularity in use of land increased and all natural system of land development were disintegrated. The new chapter in history of land of the region begins after Independence. Centuries old system of Jamindari was abolished. The actual development of agriculture in the region started only after the five year plans that were launched in 1951. Due to increasing population as well as paying of much attention towards the land, significant changes have been registered not only in land-use but also in all round development of socio-economic and cultural life of the people. It is expected that integrated and balanced use of land through co-operation, panchayats and land consolidation will be noticed in future.

General Land-use :

The present land-use pattern of the region is the outcome of various chronological uses of land. Cultural elements like population density, irrigation facilities, pattern of land ownership and diffusion of technical knowledge have much influenced it. Economic condition of the region can be developed more through maximum utilization of land. Since availability of land is limited and pressure of population has increased, therefore there is a great need of optimum use of land. The use of land resource is the investigative point of land problem and planning[3]. To evaluate the use and misuse of land as

well as to determine its ideal uses, the examination and analysis of the manner in which the land is utilised for different purposes, seem very essential[4]. In India nine fold classification of land is made. These are the following :-

1. Forests
2. Land put to non-agricultural uses;
3. Barren and uncultivated land;
4. Permanent pastures and other grazing land;
5. Miscellaneous tree crops and groves not included in the net area sown;
6. Cultivable waste;
7. Current fallows;
8. Other fallows;
9. Net area sown.

for the convenience of the discussion, these classes of land have been grouped as -

(i) Forests (category 1)
(ii) Land not available for agriculture (Categories 2 & 3).
(iii) Uncultivable land ( 4 & 5)
(iv) Cultivable waste (6)
(v) Fallow land ( 7 & 8 )
(vi) Net area sown (9).

The pattern of land-use has been illustrated in the map (Fig. 5.1), the analysis is as follows :

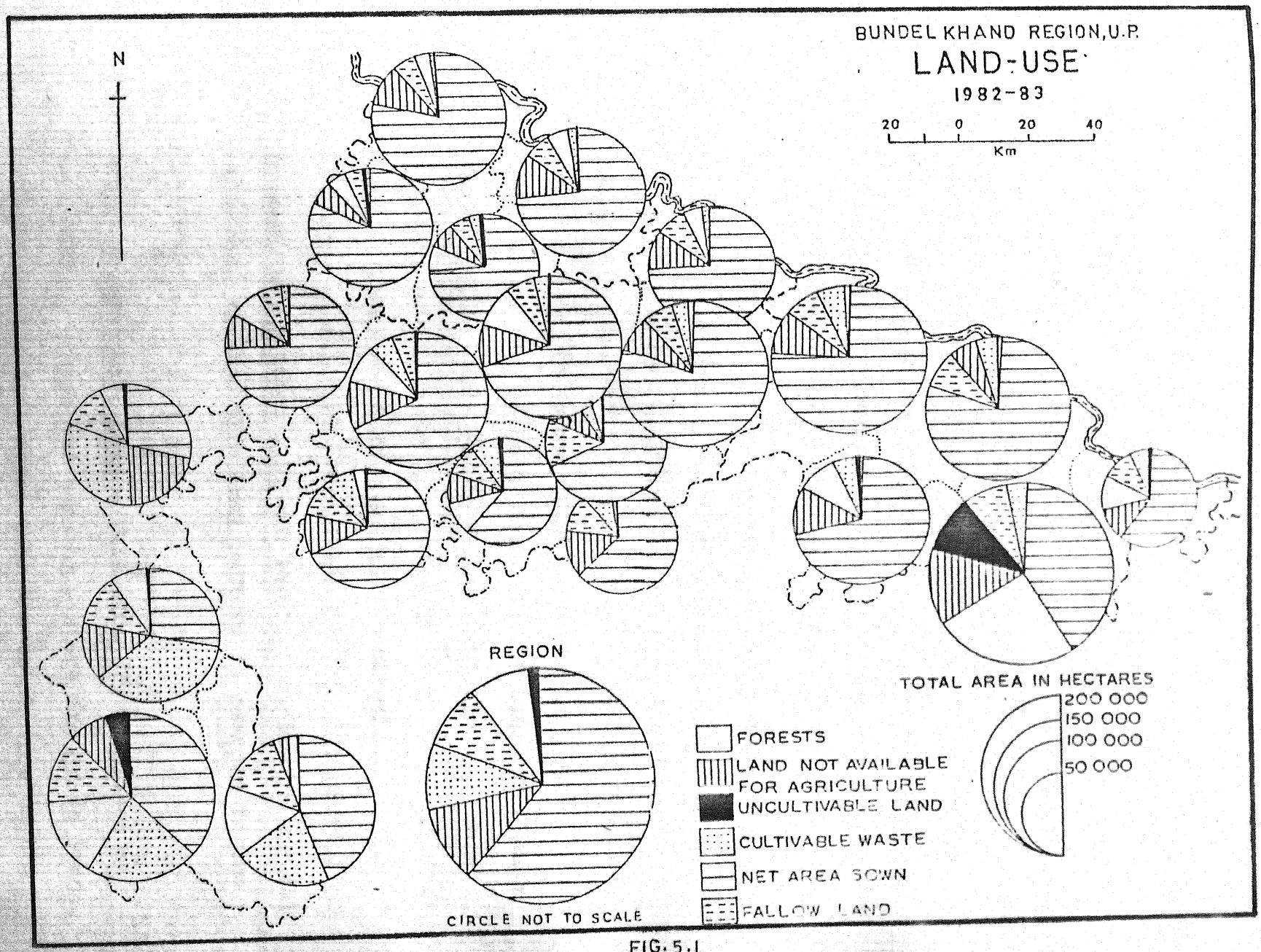
BUNDEL KHAND REGION, U.P.
LAND-USE
1982-83
20 0 20 40
Km
N
REGION
CIRCLE NOT TO SCALE
TOTAL AREA IN HECTARES
200 000
150 000
100 000
50 000
FORESTS
LAND NOT AVAILABLE FOR AGRICULTURE
UNCULTIVABLE LAND
CULTIVABLE WASTE
NET AREA SOWN
FALLOW LAND

FIG. 5.1

(i) Forests - This category of land-use covers 8.10 percent of the total area (Table 5.1). It varies from 0.22% in Baberu to 25.17% in Karwi tahsil.. The highest percentage is registered in Karwi tahsil (25.17%) followed by Lalitpur (15.49%), Mahrauni (15.27%), Mau (10.77%), Kulpahar (10.05%), Rath (9.12%), Garautha (9.06%), Talbehat (8.5%) and Moth (8.02%) tahsils because of undulating topography. In the other tahsils the percentage is below regional average.

(ii) Land not available for Agriculture - Under this category of land-use, barren and uncultivable land and land put to non-agriculture uses such as settlements, roads, railways, water bodies, mountains and plateus etc. are included. It covers 10.28 percent of the total area under study. Its highest percentage is found in Jhansi tahsil (18.33%) followed by Talbehat (14.25%), Mahoba (13.94%), Karwi (13.30%), Naraini (12.09%), Mau (11.53%), Kalpi (11.38%) and Garautha (11.34%) tahsils. In the remaining tahsils the percentages of this category of landuse vary between 7.52 and 10.93. Inspite of spatial variation, no distributional pattern is emerged in the region.

(iii) Uncultivable Land - This category comprises of scrub-lands, groves and garden; pasture and gross lands. It accounts for 1.69 percent of the total area of the

Table 5.1 : Land Utilization in the Region (1982-83)

| Tahsils/ Region | Categories of Land use | | | | | |
|---|---|---|---|---|---|---|
| | (i) | (ii) | (iii) | (iv) | (v) | (vi) |
| Moth | 8.02 | 9.44 | 0.52 | 1.33 | 6.31 | 74.38 |
| Garautha | 9.06 | 11.34 | 0.38 | 5.64 | 5.63 | 67.95 |
| Mauranipur | 2.92 | 10.93 | 0.66 | 8.77 | 8.83 | 67.89 |
| Jhansi | 5.59 | 18.33 | 0.97 | 31.32 | 12.36 | 31.44 |
| Talbehat | 8.51 | 14.21 | 0.69 | 36.02 | 12.70 | 27.87 |
| Lalitpur | 15.49 | 7.52 | 4.76 | 22.84 | 13.18 | 36.21 |
| Mahrauni | 15.27 | 5.32 | 0.15 | 21.23 | 13.80 | 44.23 |
| Hamirpur | 4.98 | 10.38 | 0.22 | 1.86 | 8.18 | 74.38 |
| Rath | 9.12 | 10.08 | 0.56 | 3.32 | 6.84 | 70.08 |
| Kulpahar | 10.05 | 9.74 | 0.86 | 8.64 | 9.73 | 60.98 |
| Charkhari | 4.17 | 8.91 | 0.36 | 5.32 | 12.47 | 68.77 |
| Maudaha | 1.06 | 7.84 | 0.26 | 3.46 | 7.30 | 80.08 |
| Mahoba | 2.00 | 13.94 | 0.10 | 8.45 | 11.77 | 63.65 |
| Jalaun | 4.00 | 10.37 | 0.63 | 0.84 | 5.86 | 78.30 |
| Konch | 5.27 | 6.57 | 0.97 | 0.87 | 4.65 | 81.67 |
| Orai | 7.75 | 7.56 | 1.13 | 1.66 | 9.43 | 74.37 |
| Kalpi | 6.07 | 11.38 | 0.13 | 1.97 | 7.59 | 73.86 |
| Banda | 0.70 | 9.68 | 0.43 | 6.06 | 7.38 | 75.75 |
| Baberu | 0.22 | 6.39 | 0.49 | 4.55 | 8.43 | 79.92 |
| Naraini | 0.68 | 12.09 | 1.03 | 5.58 | 9.62 | 71.00 |
| Karwi | 25.17 | 13.30 | 9.95 | 3.94 | 7.38 | 40.26 |
| Mau | 10.77 | 11.53 | 1.60 | 6.12 | 10.29 | 59.69 |
| Region | 8.10 | 10.28 | 1.69 | 8.98 | 8.92 | 62.03 |

region. There are two tahsils Karwi and Lalitpur where the percentages of uncultivated land are 9.95% and 4.76% respectively. There are another three tahsils Mau, Orai and Naraini where the percentages vary between 1.03 and 1.60. In the remaining tahsils the percentages are below 1.00.

(iv) Cultivable Waste :

Cultivable waste records 8.98% of the total area in the region. The highest cultivable waste land is found in Talbehat tahsil (36.02%) followed by Jhansi (31.32%) Lalitpur (22.84%), Mahrauni (21.23%), Mauranipur (8.79%), Kulpahar (8.64%) and Mahoba (8.45%) tahsils because of uneven topography which is not favourable for agriculture. On the other hand, in the remaining tahsils it is between 3-6 percent. Proportion of cultivable waste to total land is very low in north western part of the region due to plain surface well suited to intensive agriculture. In this psrt there are six tahsils : Jalaun, Konch, Moth, Orai, Hamirpur and Kalpi where percentage of cultivable waste varies from 0.84 to 1.97.

(v) Fallow Land :

Fallow Land : Old and new accounts for 8.92 percent of the total area. Old fallow is the land which was left uncultivated for two to five years or more, while

new fallow is the land which is uncultivated during current year. The spatial distribution of fallow land is anomalous. Its proportion is highest in Mahrauni tahsil (13.80%) followed by Lalitpur (13.18%), Talbehat (12.70%), Charkhari (12.47%), Jhansi (12.36%), Mahoba (11.77%), Mau (10.29%) Kulpahar (9.73%), and Naraini (9.62%) tahsils. whereas the rest tahsils, falling in low land of the region, have only between 4-8 per cent area under fallow land. These fallow lands can be brought under cultivation with the help of manure, fertilizers and irrigation facilities.

(vi) Net Area Sown :

It covers 62.03% of total reporting area of the region but the spatial distribution varies from area to area. There are six tahsils in the region i.e. Mau (59-69%), Mahrauni (44.23%), Karwi (40.26%), Lalitpur (36.21%), Jhansi (31.44%) and Talbehat (27.87%), where the amount of net area sown is below the regional average. These areas lie on the vindhyan land. The undulating topography has limited the tilling of land in these areas. In the remaining tahsils, the proportion of net area sown ranges from 60% to 81.67%. The highest proportion of net area sown is recorded in Konch tahsil (81.67%) followed by Maudaha (80.08%), Baberu (79.92%) Jalaun (78.30%), Banda (75.75), Hamirpur (74.38%), Moth (74.38%), Orai (74.37%), Kalpi (73.86%), Naraini (71.00%)

Rath (70.08%), Charkhari (68.77%), Garautha (67.95%), Mauranipur (67.87%), Mahoba (63.65%), and Kulpahar (60.98%) tahsils.

Changes in Land-Use :

As a result of various geographical factors, considerable spatio-temporal variations in land-use pattern are noticed in the region. Table 5.2 shows the changes in land-use from 1950-51 to 1982-83 at district level. The land under forests increased by 4.46 percent due to new afforestation schemes, better management of forests and vanmahotswa programme. Area under net cropping increased by 12.30% due to transfer of land from the cultivable waste and fallow lands to agricultural use. The percentages of uncultivated land, land put not agricultural uses and follow land declined by 19.58%, 3.49% and 2.42% respectively during the above period. Thus it may be concluded that the land under study area is undergoing agricultural pressure.

Table 5.2 : Changes in Land-use in percentage (1950-1983)

| Districts/ Region | Forest | Land not available for agri- culture | Other uncultivated land excluding new fallow | New fallow land | Net area sown |
|---|---|---|---|---|---|
| Jhansi including Lalitpur | + 2.97 | - 1.64 | - 9.29 | - 5.13 | +13.09 |
| Hamirpur | + 4.92 | - 4.02 | -12.76 | - 1.90 | +13.77 |
| Jalaun | + 5.08 | - 7.98 | - 5.53 | + 1.45 | + 6.98 |
| Banda | + 5.71 | - 2.83 | -13.70 | - 1.62 | +12.45 |
| Region | + 4.46 | - 3.49 | -19.58 | - 2.42 | +12.30 |

+ = increase, - = decrease

Irrigation :

Uncertainty and inadequacy of rain water have necessiated the irrigation development in the region for agricultural purposes. First of all, the chandela and Bundela chiefs took keen interest in the construction of several tanks and ponds which were the chief sources of irrigation. These tanks are even now being utilized for irrigation, drinking water and fish culture. The north-west and north-east portion of the region is irrigated by canals and wells whereas southern parts are irrigated by wells, tanks and ponds. After Independence, a number

of major and minor projects like Matatila, Govindsagar, Saprar, Arjun, Kabarai, Ohan, Ragwan, Gangau, Jamni, Koylari dams etc. are completed by the Government. Consequently the sources as well as the quantum of irrigated area have increased upto some extent.

Irrigated Area :

Inspite of huge amount of wealth spent on irrigation facilities at the state level, this region has not been much benefitted. Although the irrigated area increased two fold in last 30 years, the lack of proper irrigation facilities has hindered the agricultural as well as economic development. The percentage of net irrigated area to the net sown area (1982-83) has been given in table 5.3.

Table 5.3 : The percentage of Net Irrigated Area to the Net Sown Area (1982-83).

| Tahsils/ Region | Percentage of net irrigated area | Tahsils/ Region | Percentage of net irrigated area. |
|---|---|---|---|
| Moth | 34.52 | Maudaha | 6.12 |
| Garautha | 16.30 | Mahoba | 9.92 |
| Mauranipur | 25.80 | Jalaun | 31.36 |
| Jhansi | 60.92 | Konch | 23.95 |
| Talbehat | 54.39 | Orai | 15.03 |
| Lalitpur | 20.82 | Kalpi | 20.97 |
| Mahrauni | 16.16 | Banda | 8.08 |
| Hamirpur | 11.53 | Naraini | 38.33 |
| Rath | 29.70 | Baberu | 30.12 |
| Kulpahar | 18.49 | Karwi | 11.18 |
| Charkhari | 12.02 | Mau | 5.97 |
| | | Region | 21.34 |

From the table it is quite evident that certain parts of the region have better means of irrigation than the others with the result spatial variations are recorded in the distribution of irrigated area (Fig. 5.2B). The tahsils, which have high percentage of irrigated area, are Jhansi (60.92%), Talbehat (54.39%), Naraini (38.33%) Moth (34.52%), Jalaun (31.36%), Baberu (30.12%), Rath (29.70%), Mauranipur (25.80%) and Konch (23.95%), Kalpi, Lalitpur, Kulpahar, Garautha, Mahrauni, Orai, Charkhari, Hamirpur and Karwi tahsils of the region record 10 to 20 percentage of irrigated area while the percentages of irrigated area between 5 to 10 are found in Mau, Maudaha, Banda and Mahoba tahsils.

Sources of Irrigation :

Since single system can not serve the objectives due to variegated surface, composite system of irrigation is found in the region. Canals, tube wells, wells, tanks, reservoirs are the main sources of irrigation in the region (Fig. 5.2A). Out of total irrigated area 73.73%, 23.96%, 0.40% and 2.02% are served by canals, wells and tube wells, tanks and other sources respectively (table 5 .4). The discussion of different sources of irrigation is as follows :

Canals :

Canal irrigation has increased the acreage under

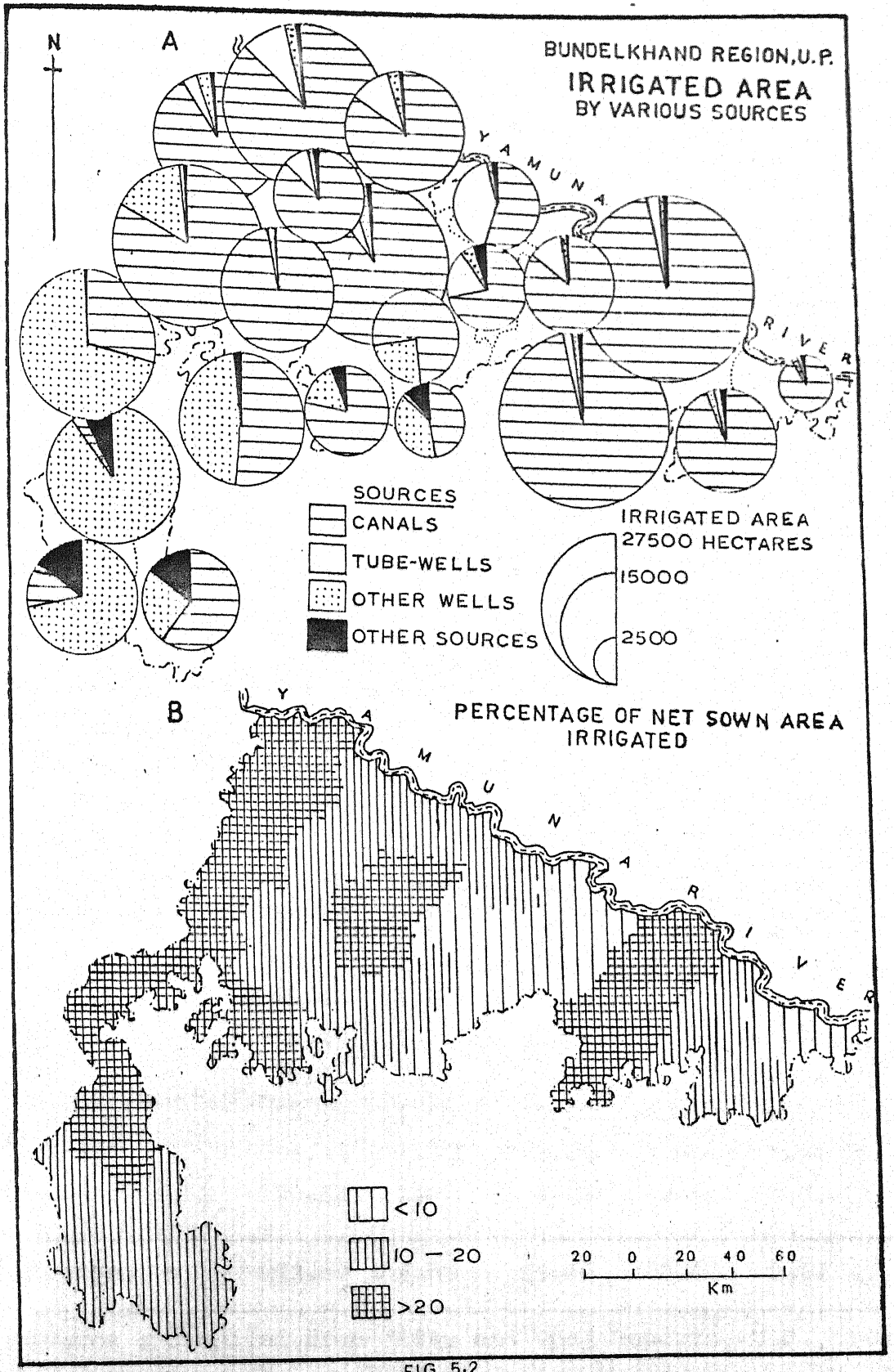
N
A
BUNDELKHAND REGION, U.P.
IRRIGATED AREA
BY VARIOUS SOURCES
YAMUNA
RIVER
SOURCES
CANALS
TUBE-WELLS
OTHER WELLS
OTHER SOURCES
IRRIGATED AREA
27500 HECTARES
15000
2500
B
PERCENTAGE OF NET SOWN AREA
IRRIGATED
YAMUNA
RIVER
<10
10 — 20
>20
20 0 20 40 60
Km

FIG. 5.2

Table 5.4 : The proportion of Irrigated Land by various Sources (1982-83).

| Tahsils/ Region | The percentages of irrigated land by | | | | |
|---|---|---|---|---|---|
| | Canals | Tube-wells | Other wells | Tanks | Other means |
| Moth | 82.62 | 0.49 | 16.23 | 0.39 | 0.27 |
| Garautha | 96.87 | - | 2.57 | 0.21 | 0.35 |
| Mauranipur | 52.22 | - | 46.01 | 0.17 | 1.60 |
| Jhansi | 28.94 | - | 71.22 | 0.004 | 0.04 |
| Talbehat | 2.88 | 0.08 | 90.67 | 1.27 | 5.10 |
| Lalitpur | 12.50 | - | 72.23 | 3.91 | 11.36 |
| Mahrauni | 59.85 | - | 25.10 | 1.59 | 13.45 |
| Hamirpur | 55.15 | 43.34 | 0.73 | 0.07 | 0.72 |
| Rath | 89.57 | 5.59 | 3.95 | 0.21 | 0.67 |
| Kulpahar | 77.41 | - | 17.03 | 0.52 | 5.04 |
| Charkhari | 49.53 | - | 43.86 | 0.39 | 6.22 |
| Maudaha | 71.60 | 17.44 | 6.99 | 0.34 | 3.62 |
| Mahoba | 46.90 | 0.47 | 40.39 | 2.16 | 10.08 |
| Jalaun | 87.96 | 9.59 | 2.10 | 0.06 | 0.31 |
| Konch | 91.97 | 4.02 | 3.43 | 0.02 | 0.56 |
| Orai | 88.77 | 9.72 | 1.46 | 0.04 | 0.01 |
| Kalpi | 85.16 | 11.33 | 3.22 | - | 0.30 |
| Banda | 85.40 | 12.28 | 1.58 | - | 0.74 |
| Baberu | 96.41 | 2.40 | 0.85 | - | 0.34 |
| Naraini | 96.55 | 1.93 | 0.87 | - | 0.65 |
| Karwi | 94.21 | 1.72 | 2.83 | - | 1.24 |
| Mau | 90.33 | 2.88 | 4.13 | 0.14 | 2.52 |
| Region | 73.62 | 4.50 | 19.46 | 0.40 | 2.02 |

Source : Compiled from 'Ritu and Upaj Reports, U.P., 1982-83.

double cropped area and also the per hectare yield in the region. The main canals of the region are the Betwa, Dhasan and Ken canals. The length of canals is higher in northern lowland than that in southern upland. For example, Jalaun district has 1572 kms of canals whereas Lalitpur district has 520 kms. Thus the canals irrigate more land in the northern part than in the southern part. Canals cover 73.62 percent of the total irrigated area in the region. Table 5.4 shows that excluding Mahrauni (59.86%), Hamirpur (55.15%), Mauranipur (52.20%) Charkhari (49.53%), Mahoba (46.90%), Jhansi (28.94%), Lalitpur (12.51%) and Talbehat (2.88%) tahsils, more than 70 percent of irrigated area of the remaining tahsils is covered by canals. There are two types of canals in the region :

(1) Permanent canals,

(2) Seasonal canals.

(1) Permanent Canals :

These canals have been brought out from perennial rivers like, The Betwa, Ken, Dhasan and Pahuj and they cover nearly 82% of the total area irrigated by canals.

(2) Seasonal Canals :

The water is taken from reservoirs for irrigation. They are not perennial sources of water, hence irrigate

a limited area around the reservoirs.

Wells and Tube-wells :

With the advent of canal irrigation, the importance of well irrigation has declined. Howsoever, wells are second important source of irrigation in the region. They serve 19.46 percent of the total irrigated area. Out of total irrigated land, 90.67% land in Talbehat, 72.23% in Lalitpur, 43.86% in Charkhari, 40.39% in Mahoba, 25.10% in Mahrauni and 16.22% in Moth tahsils is irrigated by wells. While Naraini, Baberu, Hamirpur and Orai tahsils have 0.87, 0.85%, 0.73% and 1.46% of irrigated area under wells respectively and the remaining tahsils have not more than 4 percent land irrigated by wells. Generally it is found that wells are confined in the upland Bundelkhand because of undulating surface. It is remarkable to note that the highest number of wells is found in Jhansi (25749) and Lalitpur (25131) districts. Rahat and Dhekuli are used to lift the water from wells for irrigation in Hamirpur, Jalaun and northern tahsils of Jhansi district.

Tube wells irrigation is very recent in the region. The total number of tube-wells in the region is 4111 (March 1983), out of which Banda, Hamirpur, Jalaun and Jhansi districts have 1628, 1451, 757 and 275 respectively. It is worthwhile to mention here that Lalitpur district

has no tube-well. The proportion of irrigated area by tube-wells in the region is 4.50 percent only.

Tanks, Lakes and Reservoirs :

The tanks, lakes and reservoirs are also the main sources of irrigation in the southern upland part of the region because of uneven mountaineous topography as well as seasonal nature of rivers. The Baruasagar, Kachhneo and Ajnar lakes in Jhansi district, Govindsagar and Pali lakes in Lalitpur district, Kiratsagar and Madansagar at Mahoba in Hamirpur district are the burning examples. Though these sources of irrigation are greater in number but they share only 0.40 percent of the total irrigated area in the region. A large part of Talbehat, Lalitpur, Mau, Karwi, Mahrauni and Jhansi tahsils is irrigated by them, while in the plain areas, they have no importance due to other sources of irrigation.

CROPPING PATTERN :

The cropping pattern, which is both the temporal and spatial sequences of crops, is the result of physical, economic and social factors. Owing to changing nature of seasons, crops are organised into three different groups like Rabi, Kharif and Zaid which occupy 66.19, 33.50 and 0.31 percent of the net cropped area respectively in the

study region. Rabi and Kharif crops are much important but raising of Zaid crops is not significant due to traditional practices of agriculture as well as inadequacy of irrigational facilities. In the region Rabi and Kharif food crops cover 96.06 percent of the net cropped area and non-food crops are negligible. Area under major crops like wheat, rice, gram, jwar, Bajra, Maize, Pulses oilseeds etc has been given in table (5.5) and mapped (Fig. 5.3). Following are the main crops of the region.

Wheat :

Wheat is very nutritious and is used in the preparation of different foods. It is sown during October-November and is harvested during April-May. Wheat occupies 28.59 percent of the total cropped area in the region (Table 5.5). The highest percentage (45.46%) of wheat area is recorded by Jhansi tahsil and the lowest (14.63) by Mau tahsil. Excluding Kalpi (22.93%), Karwi (22.41%) and Mau (14.63%) tahsils, all tahsils of the region record more than 24 percent of net cropped area under wheat.

Both the old and new varieties of wheat are grown in the region. Kathia (red brown) and Pisi (green white) are the main old varieties which are grown in every tahsil of the region but yield is low. Therefore high yielding

Table 5.5 : Area under Principal Crops in Percentage (1982-83)

| Tahsils/ Region | Paddy | Wheat | Barley | Jwar | Bajra | Maize | Arhar | Gram | Other pulses | Oil seeds | Other crops |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Moth | 1.03 | 38.11 | 0.64 | 15.84 | 0.03 | 0.002 | 4.99 | 16.56 | 18.09 | 1.88 | 2.53 |
| Garautha | 0.06 | 29.00 | 1.22 | 23.74 | 0.06 | - | 7.67 | 34.55 | 1.51 | 1.57 | 0.62 |
| Maura-nipur | 1.76 | 31.30 | 1.06 | 24.53 | 0.01 | - | 7.51 | 21.96 | 3.22 | 3.10 | 5.35 |
| Jhansi | 4.23 | 45.56 | 2.86 | 5.81 | 0.03 | 13.20 | 1.17 | 4.26 | 13.78 | 5.43 | 3.66 |
| Talbehat | 8.83 | 25.93 | 3.85 | 7.34 | - | 15.53 | 0.002 | 6.67 | 9.18 | 3.02 | 19.85 |
| Lalitpur | 4.33 | 29.51 | 1.22 | 30.09 | 0.21 | 8.54 | 0.21 | 8.48 | 11.90 | 3.51 | 2.16 |
| Mahrauni | 3.83 | 24.53 | 0.62 | 34.16 | - | 1.74 | 0.18 | 14.37 | 5.35 | 6.95 | 8.27 |
| Hamirpur | 0.27 | 24.94 | 0.52 | 17.69 | 1.02 | - | 6.31 | 37.03 | 6.26 | 4.90 | 1.06 |
| Rath | 1.23 | 24.47 | 2.18 | 17.75 | 0.17 | - | 5.99 | 31.42 | 9.89 | 4.34 | 2.56 |
| Kulpahar | 0.78 | 27.16 | 3.49 | 15.33 | - | - | 5.10 | 25.03 | 5.35 | 5.53 | 12.23 |
| Charkhari | 0.66 | 26.22 | 0.98 | 22.76 | 0.10 | - | 7.62 | 31.84 | 2.92 | 4.35 | 2.55 |
| Maudaha | 0.35 | 30.31 | 0.56 | 14.99 | 0.08 | - | 4.85 | 38.73 | 2.71 | 4.73 | 2.69 |
| Mahoba | 0.93 | 34.29 | 1.09 | 15.55 | - | - | 5.18 | 30.85 | 2.31 | 5.92 | 3.88 |
| Jalaun | 1.49 | 27.22 | 4.83 | 2.76 | 9.88 | 0.009 | 3.97 | 16.92 | 22.90 | 5.41 | 4.62 |
| Konch | 0.35 | 27.29 | 1.58 | 6.97 | 2.13 | - | 2.90 | 20.48 | 32.76 | 2.93 | 2.61 |
| Orai | 0.80 | 29.00 | 1.15 | 9.37 | 0.09 | - | 3.15 | 30.58 | 17.49 | 7.11 | 1.26 |
| Kalpi | 1.33 | 22.93 | 3.75 | 12.34 | 4.17 | 0.003 | 5.50 | 32.29 | 12.89 | 3.67 | 1.12 |
| Banda | 4.14 | 27.85 | 0.20 | 14.87 | 1.33 | - | 5.41 | 38.22 | 4.81 | 1.35 | 1.85 |
| Baberu | 18.69 | 31.16 | 0.27 | 10.52 | 1.71 | - | 3.77 | 27.19 | 4.98 | 0.92 | 0.72 |
| Naraini | 28.19 | 35.30 | 2.06 | 7.47 | 0.13 | - | 2.53 | 20.13 | 1.78 | 1.30 | 1.11 |
| Karwi | 8.78 | 22.41 | 5.47 | 18.28 | 4.09 | 0.008 | 7.45 | 28.14 | 0.76 | 1.88 | 2.73 |
| Mau | 6.67 | 14.63 | 8.52 | 17.07 | 11.08 | 0.005 | 9.42 | 25.94 | 0.46 | 2.26 | 3.98 |
| Region | 5.36 | 28.59 | 2.00 | 15.50 | 1.64 | 1.16 | 5.09 | 25.89 | 8.39 | 3.41 | 3.38 |

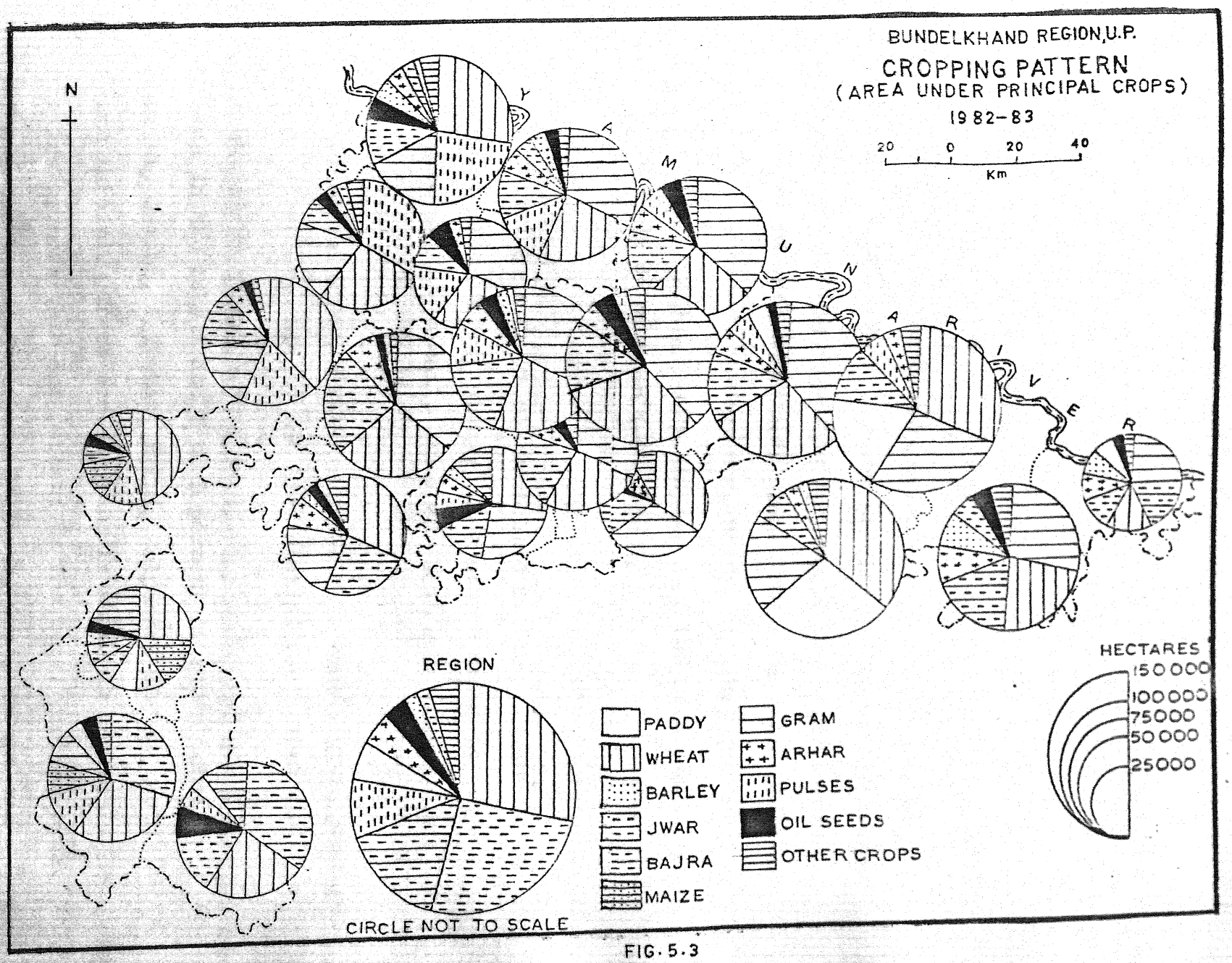
BUNDELKHAND REGION, U.P.
CROPPING PATTERN
(AREA UNDER PRINCIPAL CROPS)
1982-83
20 0 20 40
Km
N
Y
M
U
N
A
R
I
V
E
R
REGION
HECTARES
150 000
100 000
75000
50 000
25000
PADDY
WHEAT
BARLEY
JWAR
BAJRA
MAIZE
GRAM
ARHAR
PULSES
OIL SEEDS
OTHER CROPS
CIRCLE NOT TO SCALE

FIG. 5.3

varieties of wheat are gaining importance in cost of old varieties.

Paddy :

Paddy covers only 5.36 percent of net cropped area in the region. There are two tahsils : Naraini and Baberu which record highest percentage (28.19 and 18.69 respectively) of area under this crop. The area under paddy is below one percent in Hamirpur, Konch, Maudaha, Charkhari, Kulpahar, Orai and Mahoba tahsils. In the remaining tahsils, it is between 1-8 percent.

Barley :

Barley is grown on about 2.00 per cent of the total cropped area in the region. This can be grown in dry climate and light soil. It needs soil more porous than that required by wheat and bears tolerance power for alkalinity. Generally it is grown with wheat, gram, mustard and oil-seeds. Barley has less spatial variations in comparision to other crops. It covers 8.52% of cropped area in Mau tahsil and 2 to 5 percent in seven tahsils: Karwi, Jalaun, Talbehat, Kalpi, Kulpahar, Jhansi, Rath and Naraini. There are six tahsils where it covers slightly more than one percent of the total cropped area. These are Konch, Garautha, Lalitpur, Orai, Mahoba and Mauranipur tahsils and seven tahsils like Charkhari, Moth,

Mahrauni, Maudaha, Hamirpur, Baberu, and Banda account below 1 percent area under it due to significance of other crops like wheat, Rice, Gram etc. The Barley cultivation is less expensive and needs less labour.

Bajra :

Bajra, covering small area of 1.64 percent in the region, is the chief millet of inferior quality, which is used as food by poor people and also as fodder for animals. It is sown in July-August and harvested in November. It does not require irrigation. It is grown with Arhar, Moong, Jwar, Till etc. The area under this crop is highest in Mau (11.8%) tahsil followed by Jalaun (9.88%), Kalpi (4.17%), Karwi (4.09%), Konch (2.13%), Baberu (1.71%) Banda (1.33%) and Hamirpur (1.02%) tahsils where moderate rainfall and well drained loamy soils are available to its cultivation while the remaining tahsils have below one percent area under this crop.

Jwar :

Jwar, being significant crop of kharif season, occupies 15.50 percent of the total cultivated area in the region. It is sown in July and harvested in November. The highest percentage of this crop is found in Mahrauni tahsil (34.16%) followed by Lalitpur (30.09%), Mauranipur

(24.53%), Garautha (23.74%) and Charkhari (22.76%) tahsils, while the lowest percentage is noted by Jalaun tahsil (2.76%) followed by Jhansi (5.81%), Konch (6.97%), Talbehat (7.34%), Naraini (7.41%) and Orai (9.37%) and the remaining tahsils of the region have between 10-18 percent area under this crop.

Gram :

Among Rabi crops, Gram is significant cereal as well as pulse in the region. It covers 25.89 percent of the total cropped area in the region. There are nine tahsils like Maudaha, Banda, Hamirpur, Garautha, Kalpi, Charkhari, Rath, Mahoba and Orai where it covers more than 30 percent of total cropped area. Excluding three tahsils viz. Lalitpur (8.48%), Talbehat (6.97%) and Jhansi (4.26%), in all the remaining tahsils, area under Gram is between 15-30 percent.

Arhar :

Arhar is the most important among the pulses of Kharif crops. It is sown in the middle of June, flowers in the cold weather season and ripens in March. It is not out of place to mention here that this crop is sown with Kharif and harvested with Rabi crop. It is generally sown in combination with small millets. In the region, only 4.68 percent area is under it. Table 5.5 shows that the tahsils

which occupy much area under this crop are Mau (9.42%), Garautha (7.67%), Charkhari (7.62%), Mauranipur (7.51%), Karwi (7.45%) and Hamirpur (6.31%). There are ten tahsils viz. Rath, Kalpi, Banda, Mahoba, Kulpahar, Moth, Maudaha, Jalaun, Baberu and Orai which have 3-6 percent area under it and the remaining tahsils have 2.00 or below 2.00 percent of total cropped area under this crop.

Maize :

Maize is sown generally in early or middle June and matures in September. It, being not popular crop of the region, covers 1.16% of the total cropped area in the region. In the south-western portion of the study region comprising Talbehat, Jhansi and Lalitpur tahsils, Maize is grown while in the remaining tahsils it has no place excluding Jalaun, Karwi, Mau, Kalpi and Mahrauni tahsils.

Pulses :

Pulses share most important part in food. Moong, Urd and Moth are sown in Kharif and Masoor in Rabi season. It is evident that Talbehat, Rath, Lalitpur, Kalpi, Jhansi Orai, Moth, Jalaun and Konch tahsils have between 9 and 32 percent area under pulses. In the remaining tahsils, area under pulses ranges from 0.46 to 6 percent.

Oil-seeds :

Oil-seeds occupy 3.41 percent of the total cropped area in the region. The major oil-seeds of Rabi crops are Rape, mustard, sunflower and linseed and of Kharif crops are groundnut, ginger, castor and sesame. These are chief commercial crops of the study region. Table (5.5) shows that area under oil-seeds ranges from 7.4% in Orai to 0.92% in Baberu tahsil. Most of the tahsils have between 1-5 percent area under these crops.

Concludingly, it may be said that foodgrains are the main crops in the region and non-food crops like oil-seeds, cotton, tobacco and other commercial crops are insignificant. Zaid crops are confined along the river banks only.

Crop-concentration :

The pattern of crop concentration means to disclose the variation in the density of a crop at a certain time in a given region[5]. It helps to understand the areas of high and low density of individual crops in different parts of the region. Various techniques have been adopted for studying the crop concentration. Here author has followed Bhatia's method to determine the index of crop-concentration (C 1) which is as follows :-

$$C\ 1 = \frac{\text{Area of crop in an areal unit}}{\text{Total cropped area in the unit}} \div \frac{\text{Area of crop in the entire Region}}{\text{Area of all crops in the entire region}}$$

On the basis of this formula, index of concentration has been calculated for each crop and has been given in table (5.6).

Spatial concentration of some important crops is analysed below :

Wheat :

Wheat is spread throughout the region. However moderate variations in its concentration may be noticed in the region (Fig. 5.4A). It is mainly concentrated in Lalitpur (1.80), Jhansi (1.59), Moth (1.38), Naraini (1.23), Mahoba (1.19), Mauranipur (1.09), Baberu (1.09), Maudaha (1.06), Garautha (1.01) and Orai (1.01) tahsils due to either abundant irrigational facilities or fertile mar soil with long experience of its cultivation. In the remaining tahsils, concentration is registered between 0.78 to 0.98 which is slightly low in comparision to aforesaid tahsils. The lowest concentration (.51) is found in Mau tahsil where insufficient availability of irrigational facilities is the main cause of low concentration.

Paddy :

Paddy is mainly concentrated in eastern and south-western parts comprising of Naraini, Baberu, Banda, Karwi, Mau, Talbehat, Lalitpur, Mahrauni, Mauranipur and Jhansi

Table 5.6 : Crop Concentration Indices (1982-83),

| Tahsils/ Region | Paddy | Wheat | Barley | Jwar | Bajra | Arhar | Gram | Pulses | Oilseeds |
|---|---|---|---|---|---|---|---|---|---|
| Moth | 0.25 | 1.38 | 0.32 | 1.02 | 0.02 | 1.06 | 0.64 | 2.16 | 0.55 |
| Garautha | 0.009 | 1.01 | 1.61 | 1.53 | 0.03 | 1.64 | 1.35 | 0.18 | 0.46 |
| Mauranipur | 0.32 | 1.09 | 0.53 | 1.58 | 0.006 | 1.61 | 1.46 | 0.38 | 0.91 |
| Jhansi | 0.79 | 1.59 | 1.43 | 0.38 | 0.009 | 0.25 | 0.16 | 1.64 | 1.59 |
| Talbehat | 1.65 | 0.91 | 1.93 | 0.47 | - | - | 0.76 | 1.09 | 0.88 |
| Lalitpur | 0.81 | 1.80 | 0.61 | 1.94 | 0.05 | 0.04 | 0.33 | 1.41 | 1.03 |
| Mahrauni | 0.71 | 0.86 | 0.31 | 2.20 | - | 0.04 | 0.56 | 0.64 | 2.04 |
| Hamirpur | 0.05 | 0.87 | 0.26 | 1.14 | 0.62 | 1.35 | 1.43 | 0.75 | 1.43 |
| Rath | 0.23 | 0.86 | 0.53 | 1.15 | 0.10 | 1.28 | 1.21 | 1.18 | 1.38 |
| Kulpahar | 0.15 | 0.95 | 1.75 | 0.99 | - | 1.09 | 0.97 | 0.64 | 1.62 |
| Charkhari | 0.12 | 0.92 | 0.49 | 1.47 | 0.06 | 1.63 | 1.23 | 0.35 | 1.27 |
| Maudaha | 0.06 | 1.06 | 0.28 | 0.97 | 0.07 | 1.04 | 1.50 | 0.32 | 1.38 |
| Mahoba | 0.17 | 1.19 | 0.54 | 1.00 | - | 1.11 | 1.19 | 0.27 | 1.74 |
| Jalaun | 0.28 | 0.95 | 2.41 | 0.18 | 6.02 | 0.85 | 0.65 | 2.73 | 1.59 |
| Konch | 0.06 | 0.95 | 0.79 | 0.45 | 1.30 | 0.62 | 0.79 | 3.90 | 0.86 |
| Orai | 0.15 | 1.01 | 0.57 | 0.60 | 0.06 | 0.67 | 1.18 | 2.08 | 2.08 |
| Kalpi | 0.25 | 0.80 | 1.88 | 0.80 | 0.28 | 1.17 | 1.25 | 1.54 | 1.07 |
| Banda | 0.77 | 0.98 | 0.10 | 0.96 | 0.81 | 1.16 | 1.48 | 0.57 | 0.39 |
| Baberu | 3.49 | 1.09 | 0.14 | 0.68 | 1.04 | 0.81 | 1.05 | 0.59 | 0.27 |
| Naraini | 5.26 | 1.23 | 1.04 | 0.48 | 0.08 | 0.54 | 0.78 | 0.21 | 0.38 |
| Karwi | 1.64 | 0.78 | 2.74 | 1.18 | 2.50 | 1.59 | 1.09 | 0.09 | 0.56 |
| Mau | 1.24 | 0.51 | 4.26 | 0.11 | 6.75 | 2.01 | 1.00 | 0.05 | 0.66 |

BUNDELKHAND REGION, U. P.

# CROP CONCENTRATION INDEX

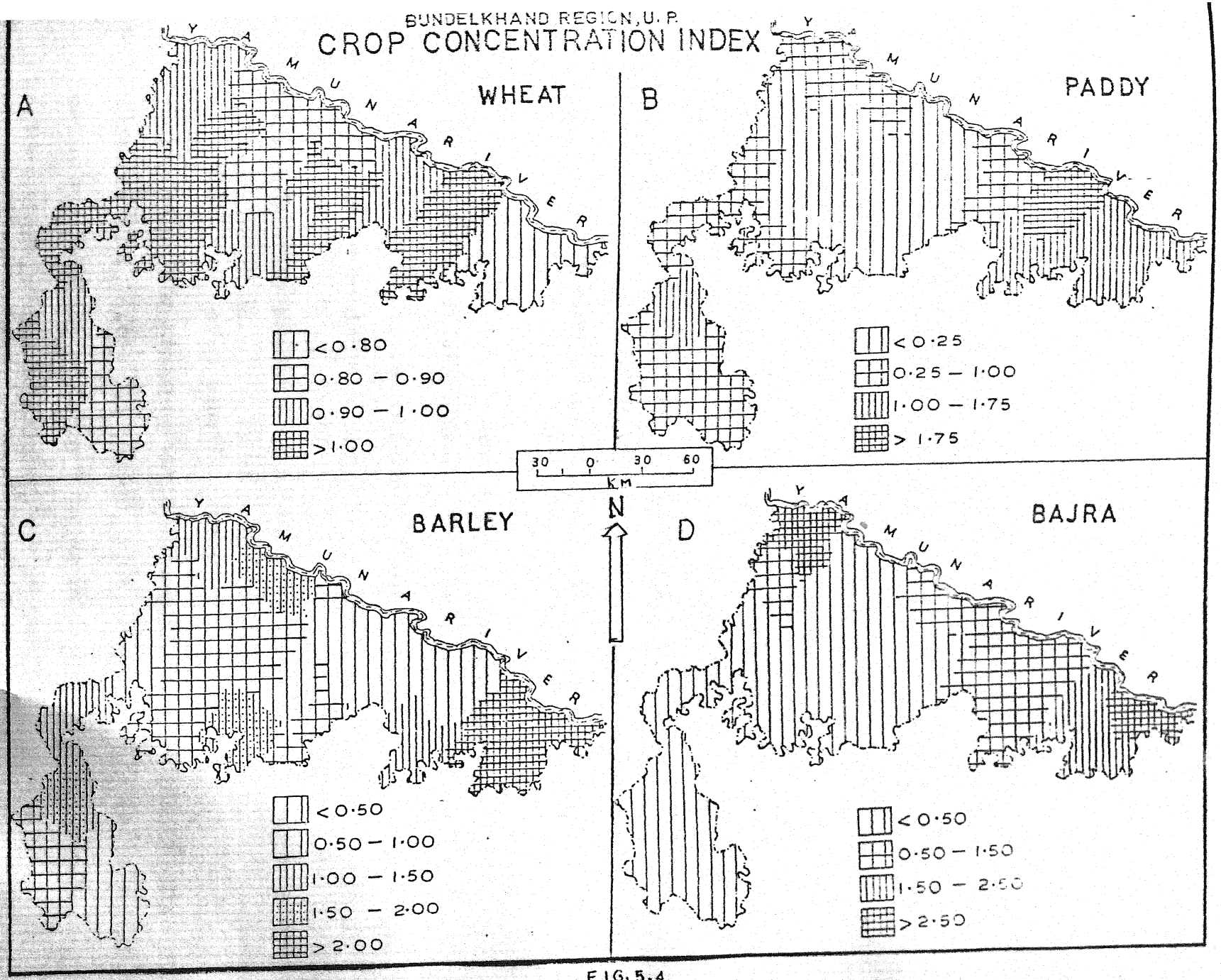


FIG. 5.4

tahsils of the region (Fig. 5.4B). The highest concentration is noted in Naraini (5.26) and Baberu (3.49) tahsils followed by Talbehat (1.65), Karwi (1.64), Mau (1.24) Lalitpur (0.81), Jhansi (0.79), Banda (0.77) and Mahrauni (0.71), Tahsils. In the remaining tahsils concentration index of this crop varies from 0.009 to 0.32.

Barley :

Barley is generally grown all over the region, as is evident from the map (Fig. 5.4C). But high concentration is noted in Mau tahsil (4.26), Karwi (2.74), Jalaun (2.41), Talbehat (1.93), Kalpi (1.88), Kulpahar (1.75), Jhansi (1.43) and Naraini (1.04) tahsils. It is due to availability of well light loamy soil. Konch, Garautha, Lalitpur, Orai, Mahoba, Rath and Mauranipur are the tahsils where its concentration is between 0.50 to 0.97 while in other tahsils the concentration is below 0.50. The lowest concentration is noticed in Baberu (0.14) and Banda tahsil (0.10) due to domination of paddy and wheat crops respectively.

Bajra :

There are seven tahsils namely Mau, Jalaun, Karwi, Konch, Baberu, Banda and Hamirpur where concentration indices of this crops are 6.75, 6.02, 2.50, 1.30, 1.04, 0.81 and 0.62 respectively due to availability of loamy soil as well as scanty rainfall. Besides these, other tahsils of the region have indices of concentration below 0.50 (Fig. 5.4D).

Arhar :

Arhar is the most important crop among the pulses. Concentration indices of this crop are between 1.00-2.01 in the Mau, Garautha, Charkhari, Mauranipur, Karwi, Hamirpur, Rath, Banda, Mahoba, Kulpahar, Moth and Maudaha tahsils while in Jalaun, Baberu, Orai, Konch, Naraini and Jhansi tahsils itis between 0.25 to 1.00 (Fig. 5.5A). Lalitpur, Mahrauni and Talbehat are the tahsils where its concentration is very low (0.04) due to rugged topography.

Jwar :

Jwar crop is grown in every part of the region (Fig. 5.5B). Its high concentration is recorded by Mahrauni tahsil (2.20) followed by Lalitpur (1.94), Mauranipur (1.58), Garautha (1.53), Charkhari (1.47), Karwi (1.18), Rath (1.15), Hamirpur (1.14), Moth (1.02), Mahoba (1.00), Kulpahar (0.99) and Maudaha (0.97) tahsils. In these areas deficiency of irrigation means as well as great extent of rugged topography has compelled the farmers to cultivate this crop for their livelihood. While in Kalpi, Baberu, Orai, Naraini, Konch, Jhansi and Jalaun tahsils, its agriculture is negligible due to dominance of wheat and paddy crops.

Gram :

Gram is mainly concentrated in central south and eastern parts consisting of Maudaha, Banda, Mauranipur,

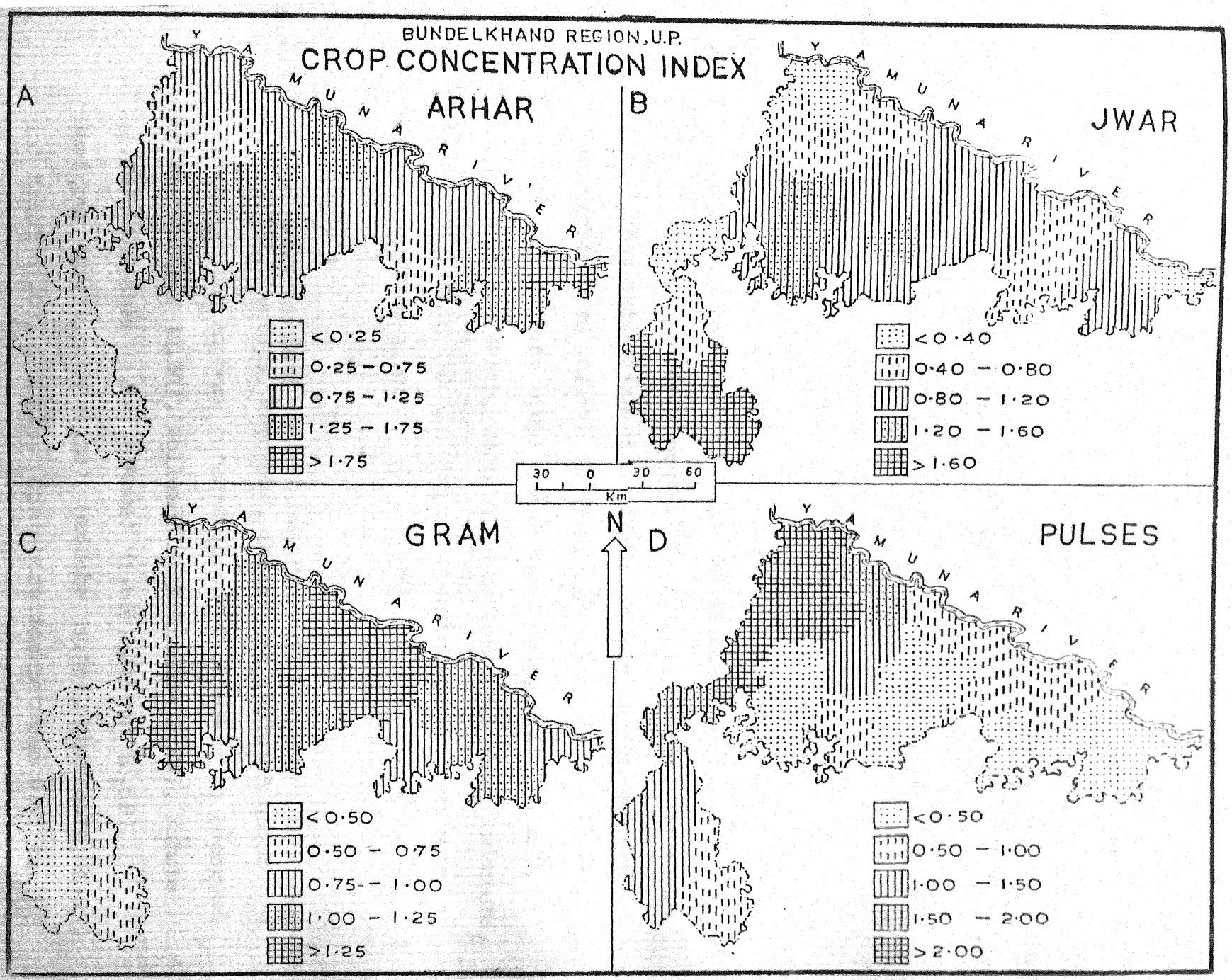
BUNDELKHAND REGION, U.P.
CROP CONCENTRATION INDEX
A
ARHAR
YAMUNA RIVER
<0·25
0·25 – 0·75
0·75 – 1·25
1·25 – 1·75
>1·75
B
JWAR
<0·40
0·40 – 0·80
0·80 – 1·20
1·20 – 1·60
>1·60
30 0 30 60
Km
N
C
GRAM
<0·50
0·50 – 0·75
0·75 – 1·00
1·00 – 1·25
>1·25
D
PULSES
<0·50
0·50 – 1·00
1·00 – 1·50
1·50 – 2·00
>2·00

FIG. 5.5

Hamirpur, Garautha, Kalpi, Charkhari, Rath, Mahoba, Orai, Karwi, Baberu, Mau, Kulpahar tahsils where it is found with moderate variation between 0.97 to 1.50 (Fig. 5.5C) and in the Konch, Naraini, Talbehat, Jalaun, Moth, Mahrauni Tahsils indices of concentration range from 0.56 to 0.78. The lowest indices of 0.33 and 0.16 are recorded by Lalitpur and Jhansi tahsil respectively.

Pulses :

Pulses include moong and urd of Kharif crops and masoor and peas of Rabi crops. It is evident from the fig. (5.5D) that pulses are concentrated mainly in the western, south-western as well as in small patches of eastern parts. Main areas of these crops are Jalaun, Moth, Orai, Jhansi, Kalpi, Lalitpur, Rath, Talbehat, Hamirpur, Kulpahar, Mahrauni, Banda and Baberu tahsils where concentration indices vary between 0.57 to 3.90.

Oil-seeds :

Til, Mustard, Rapeseed, Castor are included under oilseeds. The highest concentration of oilseeds is recorded by Orai tahsil (2.08), followed by Mahrauni (2.04), Mahoba (1.74), Kulpahar (1.62), Jhansi (1.59), Jalaun (1.59), Hamirpur (1.43), Rath (1.38), Maudaha (1.38), Charkhari (1.27) and Kalpi (1.03) tahsils. Concentration between 0.55 to

0.91 is found in Mahrauni, Talbehat, Konch, Mau, Karwi, Moth and Garautha tahsils. Banda, Naraini and Baberu TAhsils record indices as 0.31, 0.38 and 0.27 respectively because of late sowing of crops in Rabi season. Generally oilseeds are grown according to food requirements not as cash crops.

Crop Diversification :

The diversficiation of crops may be termed as raising a variety of crops in a particular parcel of land at a given time. If the crops in a great numbers are grown in an area during a year, it means that there is a higher diversification and reversing case shows specialization of crops[7]. In nutshell, it may be said that greater number of crops in crop combination reflects higher degree of diversification[8]. Since the pattern of crop diversification helps to understand the contemporary competition as well as scope of rotation of crops and affect on double cropping, total production and per hectare yield with the impact of physio-cultural factors, its study is relevant likewise crop concentration for land use planning. A number of Geographers used various techniques for measuring crop diversification. Here, Bhatia's formula has been adopted. This method is expressed as :

$$\text{Index of crop diversification} = \frac{\text{Percentage of total harvested area under 'n' crop}}{\text{Number of 'n' crops}}$$

Where-

'n' stands for those crops which cover individually 5 percent or more of the total cropped area.

On the basis of the aforesaid formula, index of diversification has been calculated for each tahsil (Table 5.7). High and low index values show low and high diversification respectively. Keeping regional average (16.75) in view, the study region has been divided into three categories of crop diversification as follows (Fig. 5.6).

(i) Areas of High Diversification :

Five tahsils : Kulpahar, Talbehat, Mau, Karwi and Mahrauni lying in the Vindhyan plateus, are included under this category. The highest diversification is marked in Kulpahar tahsil (10.89) followed by Talbehat (13.30), Mau (13.33), Karwi (15.09) and Mahrauni (15.61)tahsils due to semi-dry climate, slow development of irrigation and undulating and dissected topography.

(ii) Areas of Medium Diversification :

This category includes nine tahsils like Rath, Jhansi Kalpi, Lalitpur, Mauranipur, Mahoba, Hamirpur, Jalaun and Orai where crop diversification indices range from 15.90 to 18.71. In these areas physico-cultural conditions

needed for agricultural pursuits are more favourable in comparision to high diversified areas.

Table 5.7 : Crop Diversification Indices (1982-83).

| Tahsils/Region | Indices | Tahsils/Regiom | Indices |
|---|---|---|---|
| Moth | 22.15 | Mahoba | 18.36 |
| Garautha | 23.74 | Jalaun | 16.47 |
| Mauranipur | 18.13 | Konch | 21.88 |
| Jhansi | 16.76 | Orai | 18.71 |
| Talbehat | 13.30 | Kalpi | 17.19 |
| Lalitpur | 17.68 | Banda | 21.58 |
| Mahrauni | 15.61 | Baberu | 21.89 |
| Hamirpur | 18.45 | Naraini | 22.77 |
| Rath | 15.90 | Karwi | 15.09 |
| Kulpahar | 10.89 | Mau | 13.33 |
| Charkhari | 22.11 | | |
| Maudaha | 26.34 | Region | 16.75 |

(iii) Areas of Low Diversification :

The low diversification of crops is mainly confined in the plain Bundelkhand. The diversification is the lowest in Maudaha tahsil (26.34) followed by Garautha (23.74), Naraini (22.77), Moth (22.15), Charkhari (22.11), Baberu (21.89), Konch (21.88) and Banda tahsils.

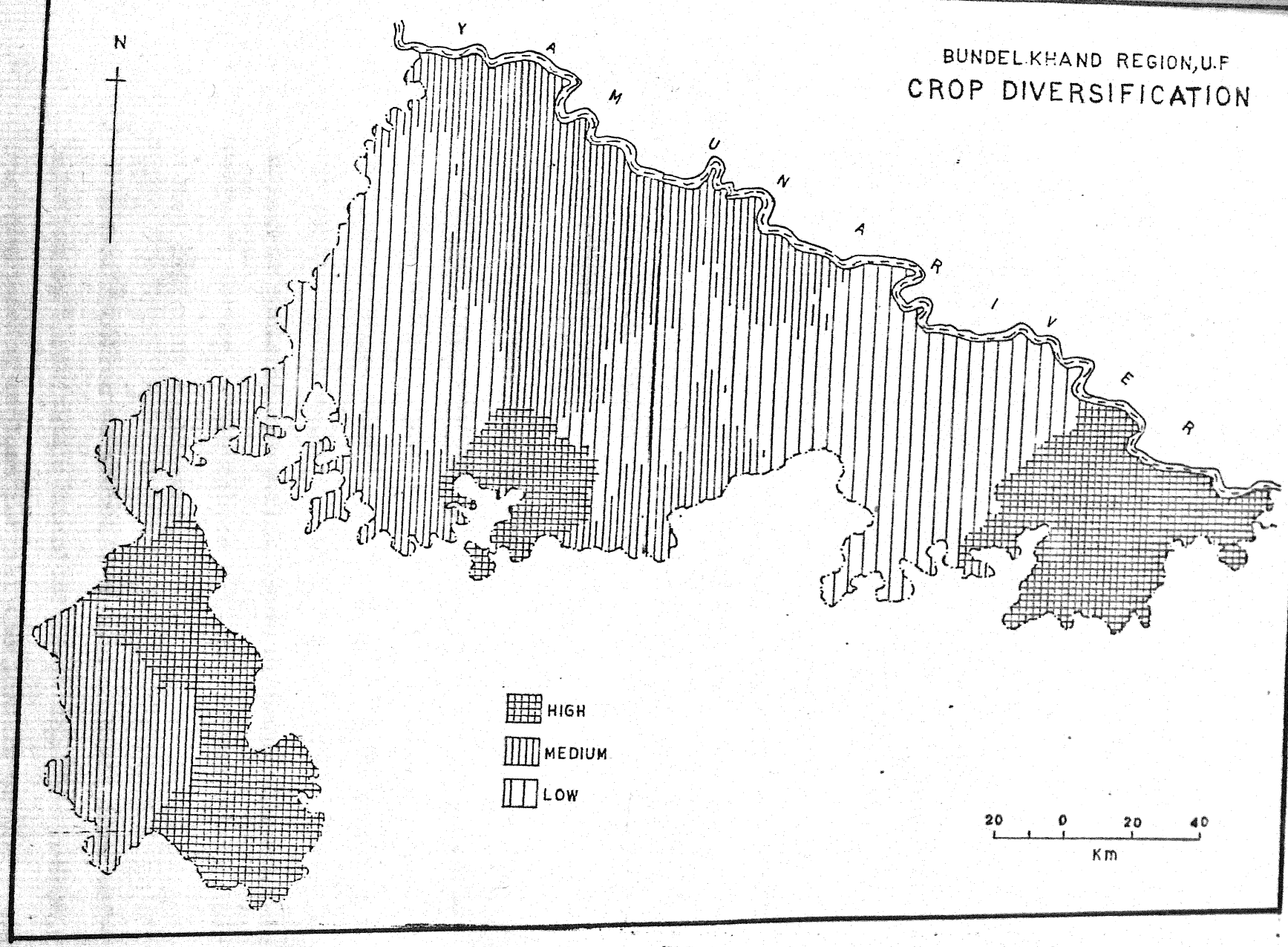
N
BUNDELKHAND REGION, U.P
CROP DIVERSIFICATION
YAMUNA RIVER
HIGH
MEDIUM
LOW
20 0 20 40
Km

FIG. 5.6

CROP COMBINATION REGIONS :

Completely isolatory growing of a crop in an area is rare. Generally a number of crops are raised in an area during a year. Study of various crops collectively in an area is termed as crop combinational analysis. It provides a systematic study that would be of great importance in demarcating crop regions which help in understanding the reality of agricultural land-use. The features of crop combination do not emerge suddenly in a region but it is the outcome of physio-cultural environment existing there. In fact, it represents relationship between man and physical environment[9].

The pioneer work in this field was done by John C. Weaver[10] who used statistical method for determining crop combination region of middle west (U.S.A.). Since then, many Geographers[11] have devised various techniques for determining the crop combination regions in the different parts of the world. Some of them followed weaver's method, while others modified it and others initiated different techniques.

Doi[12] corrected weaver's method to avoid huge calculation by substituting standard deviation $\frac{Ed2}{n}$ method, crop combination regions for all the tahsils of the study area have been determined. There are 18 types of crop

combinations including three to six crops in the region (Fig. 5.7). The diagnostic discussion of crop combinations is made in the following lines :

Three Crop Combination Regions :

Thirteen tahsils of the region come under this group. In Garautha, Hamirpur, Charkhari, Maudaha, Orai and Banda tahsils, Gram ranks first, but in Jhansi, Mahoba, Baberu and Naraini tahsils Wheat stands first. Wheat stands in the second place in Garautha, Mahrauni, Hamirpur, Charkhari, Maudaha, Konch, Orai and Banda tahsils; Jwar in Mauranipur, Gram in Maudaha and Baberu and Paddy in Naraini tahsils. The rank orders of the other crops are shown in table (5.8).

Four Crop Combination Regions :

This crop combination is found in Moth, Rath, Jalaun Kalpi and Karwi tahsils. Wheat ranks first in Moth and Jalaun tahsils, but in Rath, Kalpi and Karwi tahsils Gram scores first place. Moth and Jalaun are the tahsils where pulses stand in second order, while in Rath, Kalpi and Karwi tahsils wheat ranks in second place.

Five Crop Combination Regions :

Lalitpur and Kulpahar tahsils come under this group. In Lalitpur tahsil Jwar, wheat, pulses, maize and gram form one combination while in the Kulpahar wheat ranks first

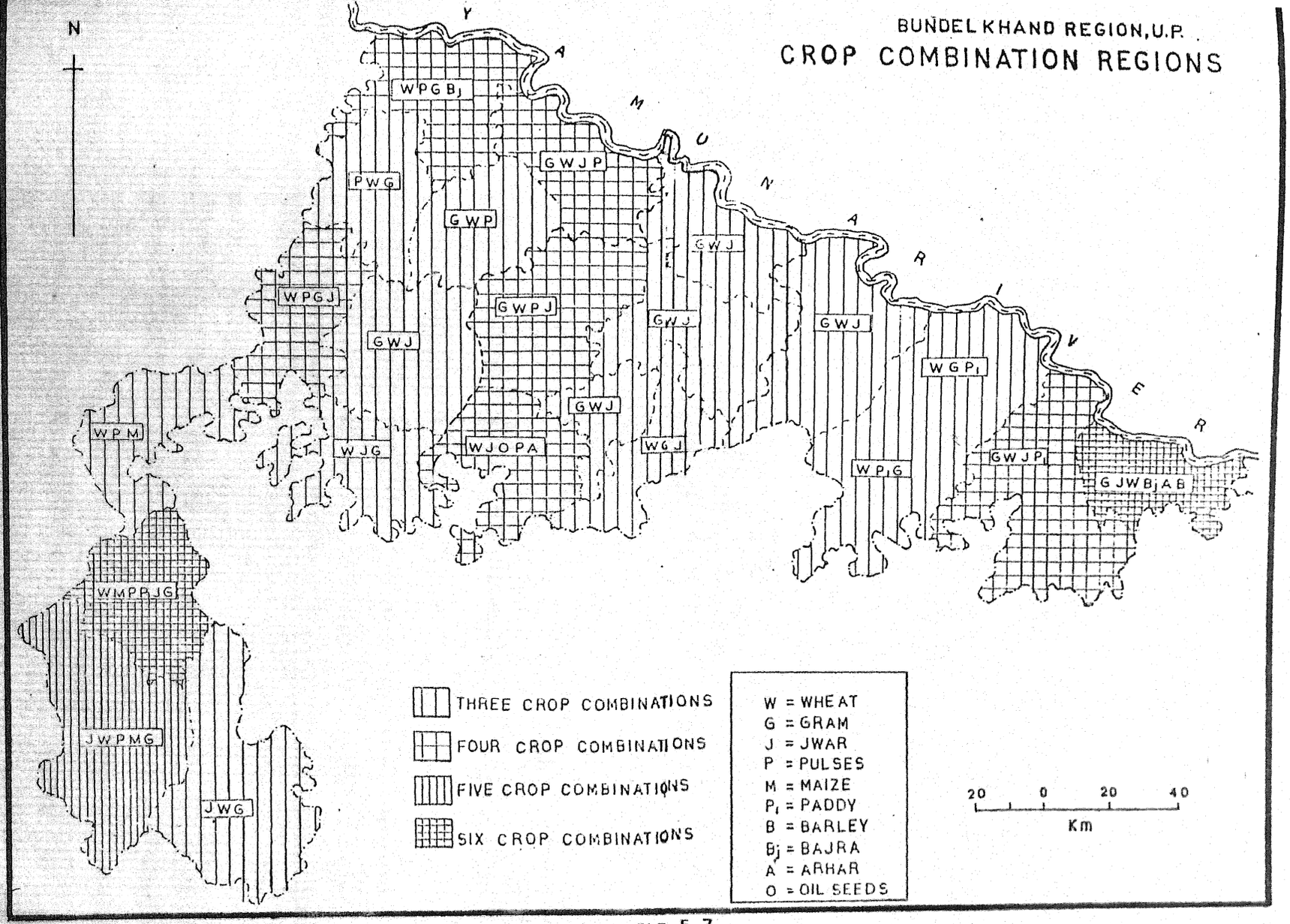
BUNDELKHAND REGION, U.P.
CROP COMBINATION REGIONS
N
YAMUNA RIVER
WPGBj
PWG
GWJP
GWP
GWJ
WPGJ
GWPJ
GWJ
GWJ
GWJ
GWJ
WPM
WJG
WJOPA
WGJ
WPjG
WGPj
GWJPj
GJWBjAB
WMPPJG
JWPMG
JWG
THREE CROP COMBINATIONS
FOUR CROP COMBINATIONS
FIVE CROP COMBINATIONS
SIX CROP COMBINATIONS
W = WHEAT
G = GRAM
J = JWAR
P = PULSES
M = MAIZE
Pj = PADDY
B = BARLEY
Bj = BAJRA
A = ARHAR
O = OIL SEEDS
20 0 20 40
Km

FIG. 5.7

and other crops in descending order are Jwar, oilseeds, Pulses and Arhar.

Table 5.8 : Crop Combination Regions (1983).

| Tahsils/Region | Crop combinations | Tahsils/Region | Crop Combinations |
|---|---|---|---|
| Moth | WPGJ | Mahoba | WGJ |
| Garautha | GWJ | Jalaun | WPGB$_J$ |
| Mauranipur | WJG | Konch | PWG |
| Jhansi | WPM | Orai | GWP |
| Talbehat | WMPP$_1$JG | Kalpi | GWJP |
| Lalitpur | JWPMG | Banda | GWJ |
| Mahrauni | JWG | Baberu | WGP$_1$ |
| Hamirpur | GWJ | Naraini | WP$_1$G |
| Rath | GWPJ | Karwi | GWJP$_1$ |
| Kulpahar | WJOPA | Mau | GJWB$_J$AB |
| Charkhari | GWJ | | |
| Maudaha | GWJ | Region | WGJ |

Where -

W = Wheat
G = Gram
J = Jwar
P = Pulses
M = Maize
P1 = Paddy
B = Barley
$B_J$ = Bajra
A = Arhar

Total number of crop:

| | |
|---|---|
| Combination regions | = 18 |
| Monoculture | = 0 |
| Three crop combination Regions | = 9 |
| Four Crop Combination Regions | = 5 |
| Five crop combination Regions | = 2 |
| Six crop Combination Regions | = 2 |

Six Crop Combination Regions :

This crop combination is found in Talbehat and Mau tahsils where wheat and Gram secure first and second ranks respectively. Remaining other crops in descending order are shown in table (5.8).

The delineation of crop combination reveals that the areas of three and four crop association cover a wide part of the region. There are four tahsils like Kulpahar, Lalitpur, Talbehat and Mau where five and six crop combinations are observed. The specialisation of one or two crops in the region is not available. It is due to backwardness of agricultural practices, techniques as well as irregularity of rainfall and also inadequacy of irrigational facilities in the region.

From preceeding discussion made for main agricultural aspects like land-use, cropping pattern, concentration, diversification and crop combinational analysis, following chief characteristics of agriculture may be noticed in the study region :

(i) Mostly dry farming is in practice due to inadequate means of irrigation and rainfall.

(ii) mixed farming is a significant feature.

(iii) Agriculture is carried mostly on traditional pattern except in Jalaun and northern parts of Hamirpur district.

(iv) Lack of commercial crops and supremacy of cereals is common phenomena.

(v) Double cropping is small.

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# CHAPTER VI

## CROP PRODUCTIVITY AND POPULATION BALANCE

Agriculture is the main economic activity in the region. Nearly 85% of working force is employed in this sector directly or otherwise. There are well marked two agricultural seasons in the region viz. Kharif and Rabi. Rabi crops occupy 62.60 percent of the gross cultivated land, whereas 37.29 percent is devoted to Kharif crops and the remaining negligible percentage (0.21%) under Zaid crops. The major crops of the Rabi season are wheat, Gram, Barley and Peas, while Rice, Jwar, Bajra, Maize, Arhar, Moong and Urd are principal Kharif crops. The yield of principal crops is low while population is increasing faster than the availability of food resources. It is almost certain that with growing income, increasing urbanisation and changing food habits; the gap between domestic demand and supply of food-grains is likely to grow even wider in coming years. Hence for the socio-economic and cultural development of the region, the improvement of agricultural productivity is much required. Keeping this view in mind the aim of this chapter is to analyse the level of productivity and availability of food-grains in relation to the population.

### Measurement of Crop Productivity - A Review :

The maximum returns which is availed from the land

under prevailing physio - cultural conditions as well as existing level of development, is known as crop productivity. It is the result of various factors incorporating the physical socio-economic, technical and organisational. There are several methods and techniques advanced by various scholars for the measurement of agricultural productivity. Broadly these approaches encompass :-

i) Output per unit area;
ii) Output per unit labour;
iii) The volume of agricultural output and input-output ratio;
iv) Output in terms of grain equivalents per head of population;
v) Carrying capacity of land; and
vi) Composite multi variable index.

Measurement of the agricultural productivity in terms of 'grain equivalents' was first introduced by J.L. Bulck. He calculated grain equivalents either in accordance with rates at which they exchanged against predominant grain in the local market or on the basis of their caloric value. Grain equivalents as a device of measuring agricultural progress was also used by Viries[2]. He presented a modification of Buck's method by expressing all output of grains in Asian countries in terms of 'Millet rice' per head of total population. Buck had considered all grains to be

equal but Viries converted various kinds of grains into 'rice equivalents according to the local market price of each grain. Colin, Clark and Margaret Haswell[3] used Kilograms of 'wheat equivalents' per person as the scale of measurement. The scale accords with the weighing system used by the Food and Agricultural organisation (F.A.O.) of the united nations[4]. The F.A.O. weighting system is based on the regional wheat relative price weights. The greatest drawback of this approach is the preparing a composite index of productivity since a region produces numerous crops and the volume of production and productivity differ from one crop to another.

The simplest and the most important of all the measures of productivity is the productivity of land. It was first realized by Kendall[5] who devised the ranking co-efficient system in which all the areal units were ranked according to the acre-yield for each of the selected crops, then the sum of the ranks occupied by the unit was divided by the number of crops to obtain the average rank of the unit. L.D. Stamp[6] selected twenty countries and nine crops for international comparision of agricultural efficiency. He applied Kendall's method and thus obtained ranking co-efficient based on the acre yields of those selected crops.

In India, ranking co-efficient technique was firstly experienced by Shafi[7] for measuring the agricultural efficiency of Uttar Pradesh. Ranking co-efficient was obtained by acre yield of eight principal food crops of all the districts of U.P. for the period of 1952-1957. The technique was criticised because it considers only the per acre yield of a crop and does not incorporate the areal spread of that particular crop. In order to remove this weakness, Kendall's method was further modified by Sapre and Deshpandey[8] by a weighted average of the ranks of all crops in respect of their share to the total cropped area in each district. For example an enumeration unit 'A' has rank three on the basis of wheat acre yield and the crop occupies 40 percent of the total cropped area, rank fourth on the basis of gram acre yield and crop occupies 25 percent of the total cropped area, rank sixth on the basis of Jwar acre yield and the crop occupies 15 percent of the total cropped area. The weighted average of the rank would be ( 3x40) + ( 4x25 ) + ( 6x15) = 310 divided by the sum of the weights as 310/80 = 3.8. According to Kendall's method, it would have been 3 + 4 + 6 = 13 divided by the numbers of crops as 13/3 = 4.3.

A slight modification in the Spare and Deshpandey's weighted average of the ranks has been made by Bhatia[9]

to determine the agricultural efficiency in U.P. He first calculated the yield indices of various crops and multiplied them by the percentage of crop land under the different crops and divided the sum of these by the sum of the percentage of crop land under the different crops. The above may be expressed as :-

(i) $1\ ya = \frac{yc}{yr} \cdot 100$

Where-

1 ya = yield index of crop 'a'

yc = Acre yield of crop 'a' in the component unit

Yr = Acre yield of crop 'a' in the Entire region.

(ii) $Ei = \frac{1\ ya.ca + lyb \cdot cb + \text{----} lyn.cn}{ca + cb + \text{----------}cn}$

Where-

Ei = Agricultural Efficiency index

lya + 1 yb + lyn = yield indices of various crops.

ca, cb, cn = Percentage of crop land under different crops.

Enyedi[10] suggested the following formula for measuring the crop productivity.

$$\frac{Y}{Yn} : \frac{t}{Tn}$$

Where Y = Yield of selected crops in a unit area;

Yn= Total Production of crops in entire region;

t = Total cropped area of a unit area;

Tn= Total cropped area of the entire region.

A modification of Enyedi's formula was made by Shafi[11] in which the summation of total yield of all the crops in the district is divided by the total area under crops considered in the district and position thus obtained is examined in relation to the total yield of all the crops considered at the national level divided by the total area under those crops. It may be symbolically expressed as :-

$$\left(\frac{Yw}{t} + \frac{Yr}{t} + \frac{Ymi}{t} \text{ --- } n\right) : \frac{Yw}{T} + \frac{Yr}{T} + \frac{Ymi}{T}$$

$$\text{or } \frac{Y}{t} : \frac{Y}{T}$$

Where

Yw, Yr = Yield of various crops in the unit area.

t = Total area under those crops in the unit area.

Yw, Yr = Yield of various crops on the national scale.

T = Total area under those crops on the national scale.

Adopting some similar lines, Jasbir Singh[12], in a recent study applied a technique known as the crop yeild and concentration indices ranking co-efficient for measuring the agricultural productivity in Haryana.

Majid Hussain[13] measured it as money value of production per unit area. Stamp[14] has taken caloric value of farm production in measuring agricultural productivity. He calculated the standard nutrition unit (S.N.U.) by converting all the food production into calories. Jasbir Singh[15] calculated the index of agricultural efficiency to analyse the regional imbalances in the levels of agricultural production in India. He suggested the formula as follows :-

$$ca = \frac{co}{sn} \text{ --} \qquad \ldots \text{ (i)}$$

$$lae = \frac{cae}{car} \times 100 \text{ --} \qquad \ldots \text{ (ii)}$$

Where -

ca = carrying capacity

co = caloric output for ingestion per sq.km.

Sn = Weighted average standard nutrition for ingestion per person per annum.

lae= index of agricultural efficiency of an enumeration unit.

Cae= Carrying capacity of an enumeration unit.

Car= Carrying capacity of entire region.

This technique seems to be lengthy. The discussion made on crop Productivity measurement reveals that none of these method is perfect itself for measuring agricultural productivity. However Shafi's method has been followed by so many Indian Geographers.

Method Adopted in the Study :

For measuring the crop productivity in the study region, agricultural statistics were taken from 'Statistical Districts Magazines' of 1983. The analysis covers nine food crops viz. Paddy, Wheat, Barley, Jwar, Bajra, Gram, Maize, Arhar and Masoor and Shafi's Formula of productivity has been applied.

Levels of Crop Productivity :

On the basis of the formula mentioned above, productivity index of each tahsil has been worked out (Table 6.1). On the basis of regional average, tahsils have been grouped into three productivity levels (Fig. 6.1A) as follows :-

1. Areas of High Productivity :

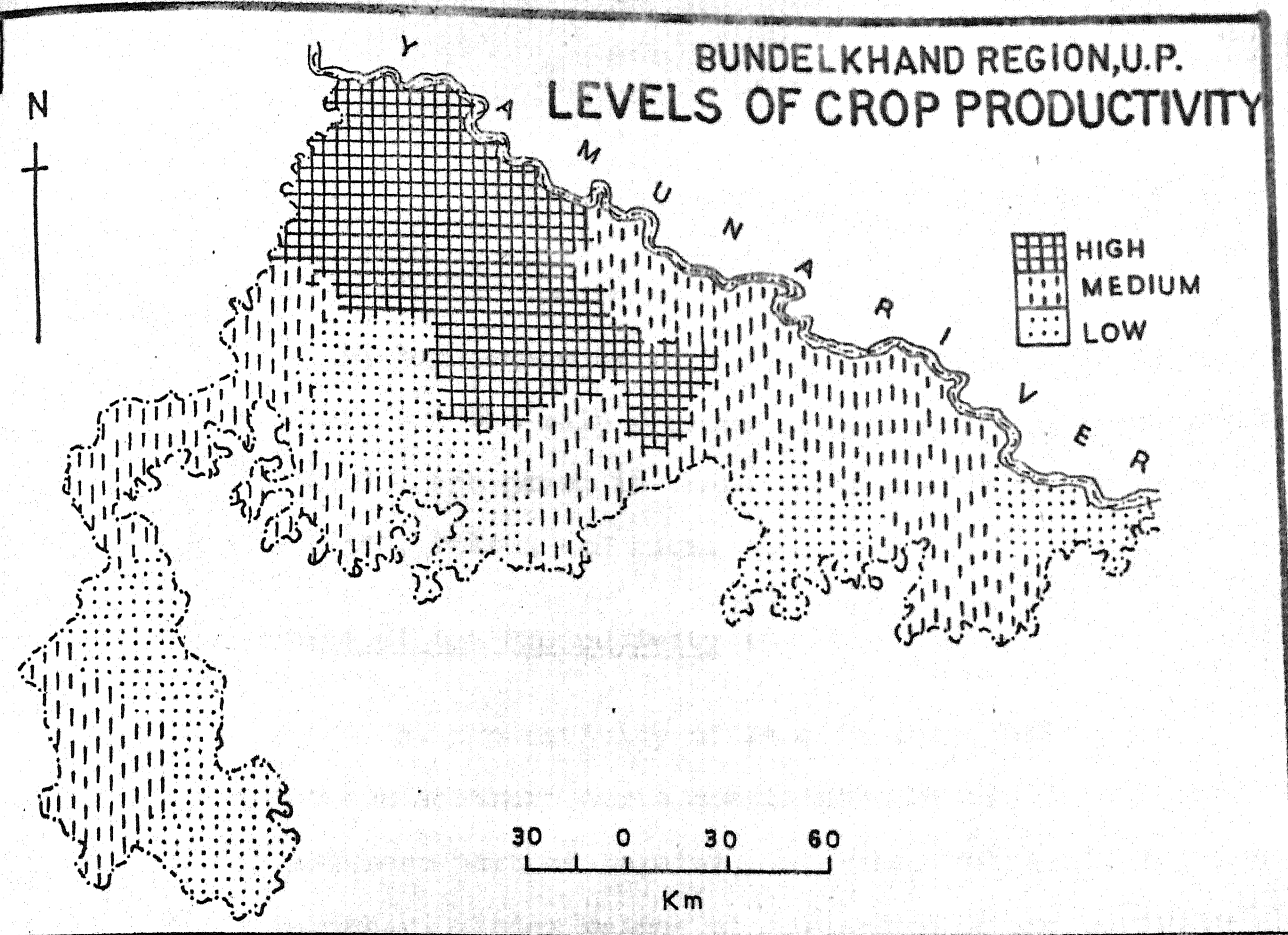
This category includes the tahsils of Konch, Jalaun, Kalpi, Orai, Rath and Maudaha where crop productivity index values range from 1.35 in Konch to 1.12 in Maudaha tahsil. The adequate supply of water through canals and wells, plain topography as well as Mar and Kabar soils have made possible to grow significant crops like wheat, Gram, Jwar, Masoor, Arhar. Besides, majority of the farmers is paying keen interest to adopt new techniques and innovations. All these have resulted in high productivity of crops.

Table 6.1 : Crop Productivity Indices (1983).

| Tahsils | Index values | Tahsils | Index values |
|---|---|---|---|
| Moth | 0.94 | Maudaha | 1.12 |
| Garautha | 0.70 | Mahoba | 1.07 |
| Mauranipur | 0.97 | Jalaun | 1.33 |
| Jhansi | 0.90 | Konch | 1.35 |
| Talbehat | 0.88 | Orai | 1.25 |
| Lalitpur | 0.93 | Kalpi | 1.29 |
| Mahrauni | 0.80 | Banda | 0.95 |
| Hamirpur | 0.96 | Baberu | 0.99 |
| Rath | 1.13 | Naraini | 0.88 |
| Kulpahar | 0.89 | Karwi | 0.92 |
| Charkhari | 0.91 | Mau | 0.89 |

2. Areas of Medium Productivity :

The medium productivity region comprises of ten tahsils viz. Mahoba, Baberu, Charkhari, Karwi, Jhansi, Banda, Moth, Hamirpur, Mauranipur, Lalitpur with productivity indices ranging from 0.90 to 1.10. Excluding riverine belts, the tahsils lying in Hamirpur and Banda plains have fertile and good quality of Mar and Kabar soils but due to inadequate irrigational facilities and traditional farming, low productivity is marked in comparision to the tahsils of high


BUNDELKHAND REGION, U.P.
LEVELS OF CROP PRODUCTIVITY
N
YAMUNA RIVER
HIGH
MEDIUM
LOW
30 0 30 60
Km

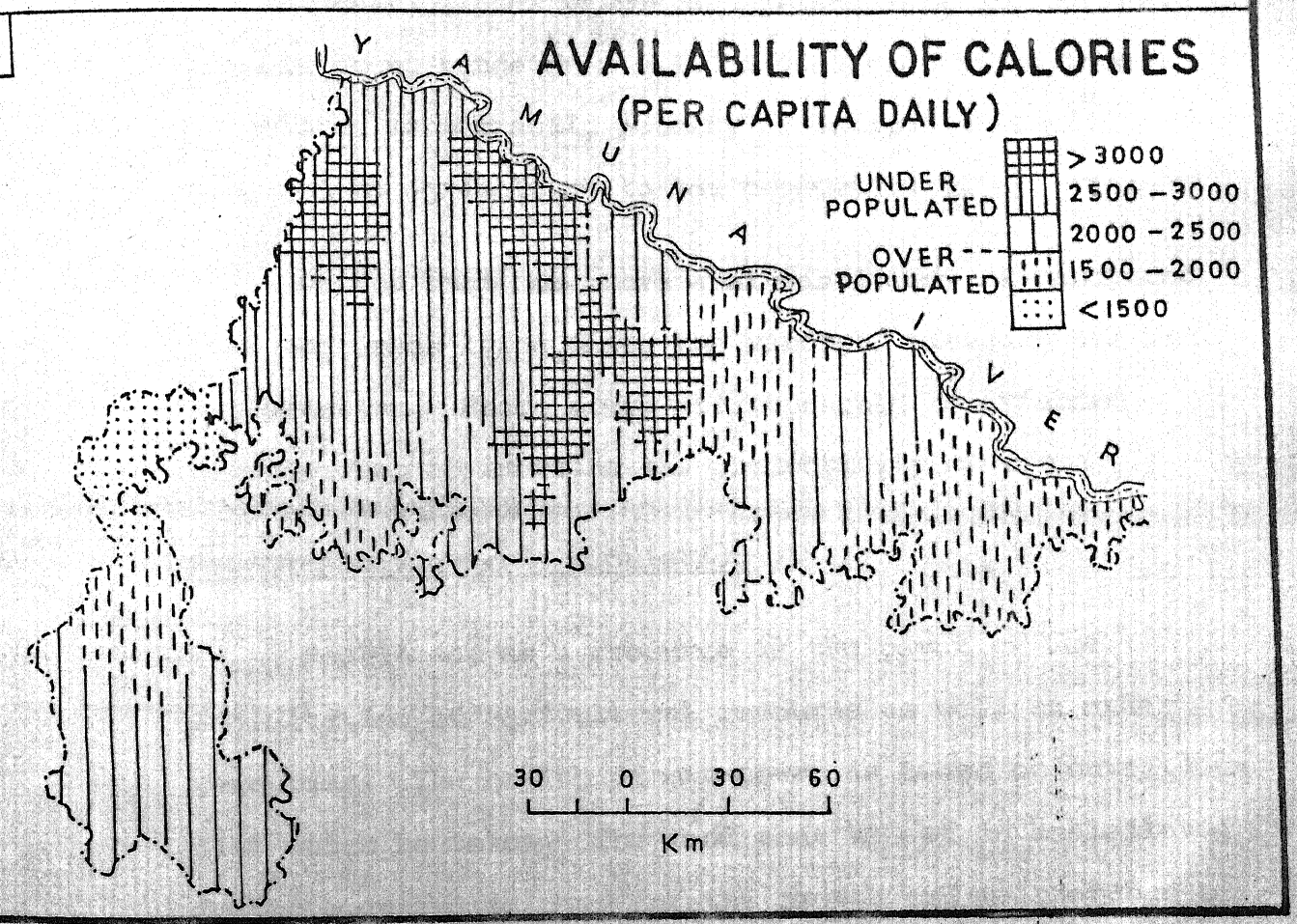

AVAILABILITY OF CALORIES
(PER CAPITA DAILY)
YAMUNA RIVER
UNDER POPULATED
OVER POPULATED
>3000
2500 – 3000
2000 – 2500
1500 – 2000
<1500
30 0 30 60
Km

FIG. 6.1

category. In the remaining tahsils of this category, undulating topography as well as insufficient irrigational facilities are the main reasons of medium productivity. The major food crops grown in these areas are Wheat, Gram, Jwar, Bajra, Pulses and rice.

3. Areas of Low Productivity :

The low productivity of land is found mainly in eastern and southern parts constituted by the tahsils of Mau, southern part of Naraini, Garautha, Mahrauni, Talbehat and Kulpahar. Index values of agricultural productivity in this group range from 0.70 to 0.89. undulating topography as well as Rankar soil, paucity of irrigation facilities have led to agriculture to low productivity.

On the basis of above analysis it may be concluded that the areas lying along the vindhyan plateaus are much unproductive. Hence every effort should be extended towards them to increase the productivity of crops.

Foodgrains vis-a-vis Population :

Population as a resource is the pivot of the exploitation of agricultural resource as well as other resources. The health of man-power is based on nutritious diet which he takes. The food that we eat is assimilated in the body and is used for the growth and maintenance of

tissues. Life can not exist without food and it is for this reason that every living organism strives its utmost to obtain its food requirements. In fact, the food consumed by us, serves as a fuel for our body machine. It is all required for body building, the growth, the repair or renewal of the actual body including reproduction and to preserve a proper medium in which biochemical process of body can take place[16]. Food stuffs may be classified as cereals, nuts and oilseeds, vegetables fruits, milk and flesh foods. These foods contain substances known as nutrients. The nutrients include proteins, fats, carbohydrates, vitamins, minerals and salts. They are present in almost all foods in varying proportion. In the study region, the main food stuffs are foodgrains, so the analysis is mainly based on the available foodgrains as a source of nutrition.

Availability of Calories from Food Grains and Standard Nutrition Unit:

To determine whether a person suffers from under-nourishment or not, we have to find out the caloric requirements of his body and caloric value of the food he takes (calory being a measure of energy supplied by the food articles we consume)[17]. The per capita per day caloric requirements have been recommended by so many scholars. Such as Aykroyd's recommendation of

2600 calories[18] and Sukhatme's[19] 2300 calories for an average Indian. Stamp[20] recommended 2460 calories as the average which is equivalent to 90,0000 calories a year and termed it as a Standard Nutrition Unit (S.N.U.). One S.N.U. is estimated to be adequate for a person. The requirement or calories in India should be much less as children constitute the major portion of population. Shafi[21], on the basis of his studies, considers intake of 2000 calories as adequate and reasonable minimum requirement under Indian condition. Mohammad[22] and Das[23] have also supported this contention. Therefore an intake of 2000 calories per capita daily has been considered reasonable minimum requirement in the present study. Thus the weighted average standard nutrition unit for ingestion in calories/person/annum for this region as a whole amounts to 730,000 calories.

For the assessment of the nutritional standard of the people of the region, the output of food crops available in each tahsil have been converted into Calories after deducting the wastages in different ways by using the conversion table published by the Indian council of Medical Research, New Delhi[24]. The total caloric output of food crops was divided by the population then it was further divided by 365 (number of days in a year). The result

is the amount of calories available per person per day. The availability of calories from food grains per head per day has been given in table 6.2 and surplus or deficit amount of calories has also been marked.

Table 6.2 : Availability of Calories Per Head Per Day on the basis of S.N.U.* (1983).

| Tahsils/Region | Availability | Surplus/Deficit |
|---|---|---|
| Moth | 2531 | + 531 |
| Garautha | 2529 | + 529 |
| Mauranipur | 1827 | - 173 |
| Jhansi | 519 | -1481 |
| Talbehat | 1935 | - 65 |
| Lalitpur | 2040 | + 40 |
| Mahrauni | 2188 | + 188 |
| Hamirpur | 2317 | + 317 |
| Rath | 2962 | + 962 |
| Kulpahar | 4240 | +2240 |
| Charkhari | 4240 | +2240 |
| Maudaha | 3134 | +1134 |
| Mahoba | 2343 | + 343 |
| Jalaun | 2501 | + 501 |
| Konch | 3349 | +1349 |
| Orai | 2576 | + 576 |
| Kalpi | 3448 | +1448 |
| Banda | 1932 | - 68 |
| Baberu | 2443 | + 443 |
| Naraini | 2192 | + 192 |
| Karwi | 1997 | - 3 |
| Mau | 1979 | - 21 |
| Region | 2283 | + 283 |

* S.N.U. = 2000 Calories/head/day.

It is apparent from the table that out of total tahsils, 16 Tahsils of the region have surplus calories per head per day (Fig. 6.1B). In these tahsils the production of food grains is not only adequate for the feeding of existing population but they may support to the population of neighbouring tahsils also while in the remaining tahsils namely Jhansi, Mauranipur, Banda, Talbehat, Mau and Karwi, deficit in calories per head per day have been recorded. Deficit in caloric intake is due to rapid growth of population and less food production due to unfertile land, inadequate irrigational facilities as well as traditional outlook of the farmers.

From the above discussion, it can be said that about 35% of total population of the region is passing through the problem of under-nutrition. If this process continued over a long time, its bad impact may be observed in the form of loss of body weight or reduction in physical activity. In the study region, Jhansi, Mauranipur, Banda, Talbehat, Karwi and Mau tahsils are facing this problem. On the other hand, inadequacy of nutritional diet shows the malnutrition which is common in the most tahsils of the region. It is due to availability of the most fraction of calories from food grains only that have carbohydrate in much quantity but vitamins, minerals and protein are lacking. That is why, illness, poor physical development, low resistance to infection and deseases are noticed in the

study region. During field survey, an examination of food habits and dietary standards has been made, through the interviews of poor and rich families. Following facts emerged :-

(1) Chapati of Gram, Wheat, Jwar, Bajra, Rice, Pulses and vegetables are the main constituents of common diet in which edible oil Gur, Sugar, milk and milk products find insignificant place.

(2) Poor families have larger expenditure on food, particularly on cereals and pulses than nutritious diet.

(3) The use of milk or milk products like Ghee, butter is noticed in rich families only, but it is not always.

(4) Excluding superior Hindu castes like Brahmin, Vashya, Carpenter, Kurmi, Black-smith, other Hindus, Muslims and scheduled caste people are non-vegetarian. At present due to impact of modernisation, tendency towards the nonvegetarian fooding is increasing day by day. It is found that Brahmin caste also uses meat, fish and eggs in their diet sometimes. Muslims consume more meat and eggs than milk in comparision to Hindus. The consumption of milk is totally based on economic condition. Scheduled caste people get hardly two times meals in a day.

They have the poorest diet in the region. Subsistence of their life depends upon chapati of Gram, Wheat, Jwar and Bajra. The area under study is mainly dominated by middle class agrarian communities and about half of its population is constituted by the poorer sections of society, especially scheduled castes. Dietary standard varies from average peasant to agricultural labourers. Average high middle class Hindus and Muslims have sufficient caloric intake to keep themselves in good health. But dietary budget of middle class cultivators keeps them below the standard diet. The lower class families are suffering from malnutrition. In study region, too much use of cereals is in practice in the diet and less stress is laid on its nutritious contents. The majority of people subsists on poor diet lacking adequate protein with abundant carbohydrates and deficient total calories.

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## CHAPTER VII

## SOCIAL STRUCTURE AND SOCIAL CHANGE

Society, in itself, is not an independent element, but it is a system comprising of many families, institutions, groups, sub-groups etc. There have been many changes in social system and cultural values in the past but the rate of changes has not always been steady, it has been some times slow and some times rapid according to political, technological and economic changes. Whenever changes occur in society, social organisation is disturbed and new social values take place.

In Indian society, not only splendid national awakening culminating in Independence from the British domination but also the bolding genius of people in the great tasks of the modernisation and transformation of political, economic and cultural life has been marked. Inspite of so many changes, traditional social organisation as well as continuation of traditional social values may be observed in its complete State in Indian society. The intent of this chapter is to analyse those processes and factors which have been influencing the social structure and cultural set-up of the study region.

### Concept of Social Structure :

Social structure is a system of social relationships

which are very complex in nature. The mutual relationships between or among the individuals are controlled and regulated by institutions of the society and social associations as such institions and associations alongwith individual groups form a part of the social structure. Structure means the total of socio-cultural institutions and their inter-relationships including the body of the unorganised activities and characteristics of the groups.

Virtually, social structure and social system are closely related to each other. But both are different aspects of one thing. One is related to arrangements of units or parts or elements and another is the pattern of functional relationships.

The term 'social Structure' has been much used in the essays of Herbert Spencer, Durkhiem, Manhiem as well as in modern literature. However, in broad sense, it has been used for all organs which constitute the society. M.Ginseberg[1] has remarked "Social Structure is concerned with the principal forms of social organisation, i.e., types of groups, associations and institutions and complex of these which constitute societies." According to MacIver and Page[2]-------- The various modes of grouping------ together comprise the complex pattern of social structure". Prof. Johnson[3] has included following aspects in the

structure of social system.

(i) Various types of sub-groups which are related to social norms.

(ii) Various types of roles gained in organisation and sub-groups.

(iii) Regulative norms controlling to sub-groups and and roles.

(iv) Cultural values.

Concludingly, it can be remarked that social structure is organisation of various groups, institutions, associations which have functional relationships with each other.

Concept of Social Change :

The modification or transformation in social structure is known as social change. In the words of Davis[4] "By social change is meant only such alternations as occur in social organisation - that is the structure and function of society". Johnson[5] explains that social change means change in social structure. The french thinker Augste Comte[6] explains it as the outcome of intellectual development. Karl Marx[7] noticed the change in society through changes in mode and ownership of production and has laid emphasis on technology. Spencer[8] explains that there is a cosmic progress from undifferentiated homogeniety to differentiated heterogeniety and thus changes take place

whether people will or not.

The thoughts that we have briefly described so far are termed as linear thoughts of social change because all these thinkers assume that there have been significant commulative changes in human social history. They have given the importance to the growth of the knowledge, the increasing skill and complexity of society and modern trends towards social and political equality. They also recognised that with the development of modern sciences, technology and industry, the change in social life of mankind is definite.

On the other hand, the ancient Indian thinkers looked on the whole process as cosmic and social change as cyclic. After 'Satyug' 'Kalyug' is the outcome of cyclic process. Many other thinkers of different countries have also developed such theoretical concepts of social change.

However Spengler[9] explains social change is the process of cultural evolution, since birth, adolescense, maturity, decline and a period of decay and disintegration. He designated the rising period of the society as 'culture' and falling period as 'civilization'. Tynbee Arnold[10] constructed his theory of social change in terms of two major concepts : Challenges and responses. Society grows when it faces challenges and responds to it and then build up itself. According to Pareto[11] Social change is brought about about by the struggle for political power among different groups.

As a matter of fact, social change may be defined as the process by which significant alternatives in the structure and functioning of a particular social system are noticed. The term 'Change' is completely independent. It only implies that there is some difference through time in the object to which it is applied. When we speak of social change, we simply assert that there is some change in social behaviours and the social structure. When we refer to social change as a process, we propound the idea of continuity. It implies that continuous changes are taking place in a definite manner because of the operation of the forces present in the situations. However, the term 'social change' is used here as to describe temporal variations in any aspect of social inter-actions or social organisation.

Patterns of Social Change :

MacIver and Page[12] have described three patterns of social change :

(1) Effects of Technological Change, Scientific Advancement etc.

The changes due to diffusion of technological and scientific innovations are seen every where. This type of change is not accidental. First, the continuous commulative development of a utilitarian device takes place and it remains in practice untill replaced by some another new device.

(2) Effects of the Economic Activity, Population Movements etc.

This type of change is the result of human action on the earth surface. This change is in the upward direction. The fundamental difference between the first and the second patterns of change is that in the former, change will be maintained in the same direction and in the latter, there is no such assurance, it may go down also.

(3) Effects of change in Fashion, Cultural Movement etc.

This type of change is somewhat similar to the second but there is no continuous increase even for a limited period of time. It is a change like a wave with its ups and downs. In nature as well as in society many phenomena fallow this cyclic course. Fashion around us, particularly in the dress of man and women, changes in a similar manner.

Contemporary Factors of Social Change :

Continuity and change both are the main characteristics of any society. Continuity is determined by the social controls, while advancement in technology, social relations among groups and presence of conflict are the responsible factors for the social change. Some thinkers like Marx and Beblon give credit to the economic factors for social change while others like Comte and Hobhouse recognised

the effects of views in the development of society. Some other thinkers have taken inventions and extension works responsible for social change. Thus main factors responsible for the social change are :-

(i) Geographical Factors;
(ii) Biological Factors;
(iii) Cultural Factors;
(iv) Technological Factors;
(v) Economic Factors;
(vi) Demographic Factors;
(vii) Psychological Factors;
(viii) Political Factors;
(ix) Industrialization and modernisation.

The process of social change may be noticed in different forms as westernisation, secularization, sanskritization, modernisation, social dynamism etc.

## TRADITIONAL SOCIAL VALUES

Traditional social values have great importance in organising the social life. Its impact may be clearly noticed in the form of 'Pursartha', varna system, joint family, brotherhood etc. Everybody efforts to achieve the goals of Dharm, Arth, Kam and Moksha in his life. 'Karm' also carries significant social value. Its conception is that the status

of rebirth is determined on the basis of 'Karm' which is closely related to 'caste'. According to Dharm-shastra good and bad deeds workers take rebirth in high and low castes respectively. The organisation of social heirarchy is also notable. The feeling of high or low has been popular from ancient times in the region. In all religions of the society, it has become so complex that even all the persons of each caste are not considered in the same social and cultural status, but different categories like very high, high, medium, low and very low are marked among them. Howsoever being in different status, they have also contact with each other in the economic, political and social activities. It is needless to say that 'Unity' in the form of 'Joint family' as well as brotherhood have paid significant role to organise the social life of the region.

Besides foregoing social values, Universality, Satya, Ahimsa, kindness and forgiveness are also another social values which have influenced the behaviourial pattern of life from the past in study region.

## CONVENTIONAL SOCIAL SET-UP

Caste system, Jajmani system, inter-caste relations, kinship system, family structure and occupational structure of castes are the main elements which have paid significant role to organise the conventional social set-up. These have been detailed in following lines :-

(1) Caste System :

Caste system is one of the most important institutions in Indian society. It is not only in Hindu society, but in the muslim and christian society also. Traditionally, Hindu society is firmly based on its chatur varna (colour but not races)[13] but as the time passed, the feeling of ritual ranking took the place of Jati (caste system).

Neale has remarked that the organising principles of Indian Society are hierarchy: hierarchy of caste, hierarchy of wealth and hierarchy of power. Each layer wants to rise in the hierarchy, but simultaneously no layer wants to be rivalled by any other group below itself[14]. In practice to maintain and to improve relative position, peoples of each hierarchy face many difficulties.

According to social hierarchical gradation[15] the castes of the region can be grouped into three orders:-

(i) Upper castes (The Brahmin, The Kshatriya, the Kayastha and the Vaishya),

(ii) Clean castes (from which the farmer can take water but not Kuchcha food),

(iii) Unclean castes (who are tabooed by contacts with the first group).

(i) Upper Castes :

This group includes the Brahmins, the Kshatriyas, the Kayasthas and the Vaishyas of the hindu society. In order of social precedence, the Brahmins are at the apex of the social pyramid. Originally they migrated from Kannauj and were divided into two main branches - Kanyakubja (Kannaujia) and Jujurhotra or Jujhotia[16]. According to a local tradition, Jujhotia sect is derived from the name of Raja Jujhar Singh who had sheltered them in his territory[17]. Other Brahmin groups viz Sanadhya Gaur, Sarwariya, Marwari etc. emigrated time to time from other neighbouring parts of the country. They hold sound socio-economic status in the society. They are big land holders and money lenders. Agriculture is the prime occupation but they feel below dignity to defile their hands with the plough. In social practice, they are more rigid than the people of other castes. With the changing economic conditions and spread of education, they are penetrating into the other walks of life also. Kshatriyas come next to the Brahmins. Bundelkhand has been the land of the Chandela[18] and Bundela Rajputs[19] who once enjoyed a respectable status in the society and ruled over the region for hundreds of years. At present also, the Kshatriyas enjoy respectable socio-economic status in the region.

The Vaishyas have been placed into third order in the society. Actually, they are traders, businessman and money-lenders. Economically, they are well to do. Jains are the sub-group of the Vaishyas who are numerous in Jhansi district. The historical monuments of Deogarh reveal their past glory. They are still rich enough and are much religious minded. They have their own customs, traditions and festivals.

(ii) The Clean Castes :

Except the Scheduled Castes, all the remaining Hindu castes are included in the clean caste -group. A tendency to improve their social and economic levels has been remarked among the clean castes.

The clean castes can be divided into two main groups:-

(A) Agrarian

(B) Artisian

The Kurmi, the Lodhi, the Ahir and the Kachhi are the excellent cultivators of the region.

The artisian group includes Nai (Barber), Kumhar (Potterman), Lohar (Black-smith), Teli (Oilman), Bari (Betelman), Sonar (Goldsmith) and Darji (Tailor). They are incumbent on the agrarian society. They help the

peasants by all means and get their wages in kind. Though hereditary profession are being practised by them, the caste system socially antagonises the principles of equality among men and sects[20].

(iii) The Unclean Castes :

The people of these castes are engaged in menial works and are considered as untouchables. This group includes Dom, Basor, Dhobi, Chamar, Kuril, Pasi, Kori, Bedia etc. They are one third of the total population of Bundelkhand. In social hierarchy, they are at the bottom. Their social status is full of hardships and restrictions. The sitting on cot before the higher castes is prohibited, their brides can not ride on 'Palki'. The untouchables especially 'Dome' is prohibited to enter the temples or sacred places and to take water from the wells. They are employed in Begar (Forced Labour). They can not wear golden ornaments and fine cloths. The Chamar is agricultural labourer among the unclean castes. People of other castes are the traditional workers.

In appearance, they are small and medium stature and dark in complexion. They live and die in debt. Panchayat is a powerful tribunal which controls their social behaviours. In the light of education and march of time, they are gaining momentum in socio-economic development due to various

governmental policies.

## SPATIAL DISTRIBUTION OF CASTES

Although the fields of social activities of different castes are changing due to social development and modernisation they are not disappearing because traditional ideas are deep rooted in the society. Nevertheless the study of spatial distribution and ranking order of castes is necessary to reveal the social structure and characteristics. It is impossible to make accurate analysis of caste distribution due to unavailability of recent data. Last census of castes was carried out in 1931, which forms the base of present analysis. Table and Figure (7.1) exhibit the distribution of various castes in the region.

It is obvious from the table that the population of Chamars is in the highest proportion. They account for 16.08% of total population in the region. In all the districts, the population of Chamars is higher than that of other castes (Fig. 7.2A). Next to the Chamars comes Brahmin caste which is 9.90% of total population of the region but it is not in second rank in all the districts (Fig.7.2B). It is in 2nd rank in Banda and Jalaun districts, in 3rd rank in Hamirpur and in 5th rank in Jhansi district. The proportion of Ahir population (7.34%) is in the 3rd rank in the region (Fig 7.2C). The same

Table 7.1 : Distribution of Castes (1931). (As Percentage of Total Population).

| Districts | Total Population | Ahir | Arakh | Barhi | Bhangi | Bhar-Bhunja | Bhat | Brahmin | Chamar | Darzi | Dhobi |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Jhansi including Lalitpur | 673937 | 7.78 | - | 1.71 | 1.08 | 0.05 | 0.16 | 7.66 | 14.72 | 0.52 | 1.91 |
| Jalaun | 425430 | 3.50 | - | 1.16 | 1.66 | 0.25 | 0.31 | 9.63 | 18.87 | 0.42 | 1.86 |
| Hamirpur | 501717 | 6.52 | 0.51 | 0.93 | 0.89 | 0.45 | 0.33 | 8.39 | 16.23 | 0.58 | 1.93 |
| Banda | 624604 | 10.14 | 3.05 | 0.97 | 0.21 | 0.85 | 0.20 | 13.70 | 15.55 | 0.59 | 1.31 |
| Region | 2225688 | 7.34 | 0.97 | 1.22 | 0.72 | 0.40 | 0.24 | 9.90 | 16.08 | 0.53 | 1.73 |

| Districts | Dom | Gaderia | Kachhi | Kahar | Kalwar | Kayastha | Kewat | Khangar | Khatik | Kori | Kumhar |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Jhansi including Lalitpur | 1.72 | 2.91 | 10.75 | 3.13 | 0.49 | 1.33 | 0.04 | 1.36 | 0.27 | 4.63 | 1.77 |
| Jalaun | 1.59 | 4.42 | 7.31 | 1.05 | 0.39 | 1.38 | 0.37 | 1.68 | 0.37 | 5.41 | 2.47 |
| Hamirpur | 2.90 | 2.70 | 6.66 | 2.35 | 0.52 | 1.12 | 2.37 | 1.37 | 2.42 | 4.83 | 4.24 |
| Banda | 0.99 | 1.85 | 2.98 | 1.49 | 0.54 | 1.09 | 4.20 | 0.04 | 0.52 | 3.36 | 3.22 |
| Region | 1.75 | 2.85 | 6.99 | 2.10 | 0.49 | 1.23 | 1.80 | 1.05 | 0.39 | 4.47 | 2.87 |

Table 7.1 contd.

| Districts | Kurmi | Lodh | Lohar | Nai | Rajput | Sonar | Teli | Vaishya | Muslim | Others |
|---|---|---|---|---|---|---|---|---|---|---|
| Jhansi including Lalitpur | 2.40 | 7.83 | 1.29 | 1.93 | 4.60 | 0.74 | 2.07 | 2.00 | 5.85 | 7.26 |
| Jalaun | 2.79 | 2.60 | 1.27 | 2.11 | 8.89 | 0.87 | 2.77 | 2.96 | 6.79 | 3.80 |
| Hamirpur | 0.53 | 10.64 | 1.57 | 1.94 | 5.68 | 1.16 | 1.98 | 2.47 | 6.54 | 2.03 |
| Banda | 4.78 | 22.69 | 1.10 | 1.57 | 7.04 | 0.89 | 1.62 | 3.11 | 5.84 | 4.47 |
| Region | 2.72 | 6.02 | 1.30 | 1.87 | 6.35 | 0.90 | 2.06 | 2.60 | 6.18 | 4.83 |

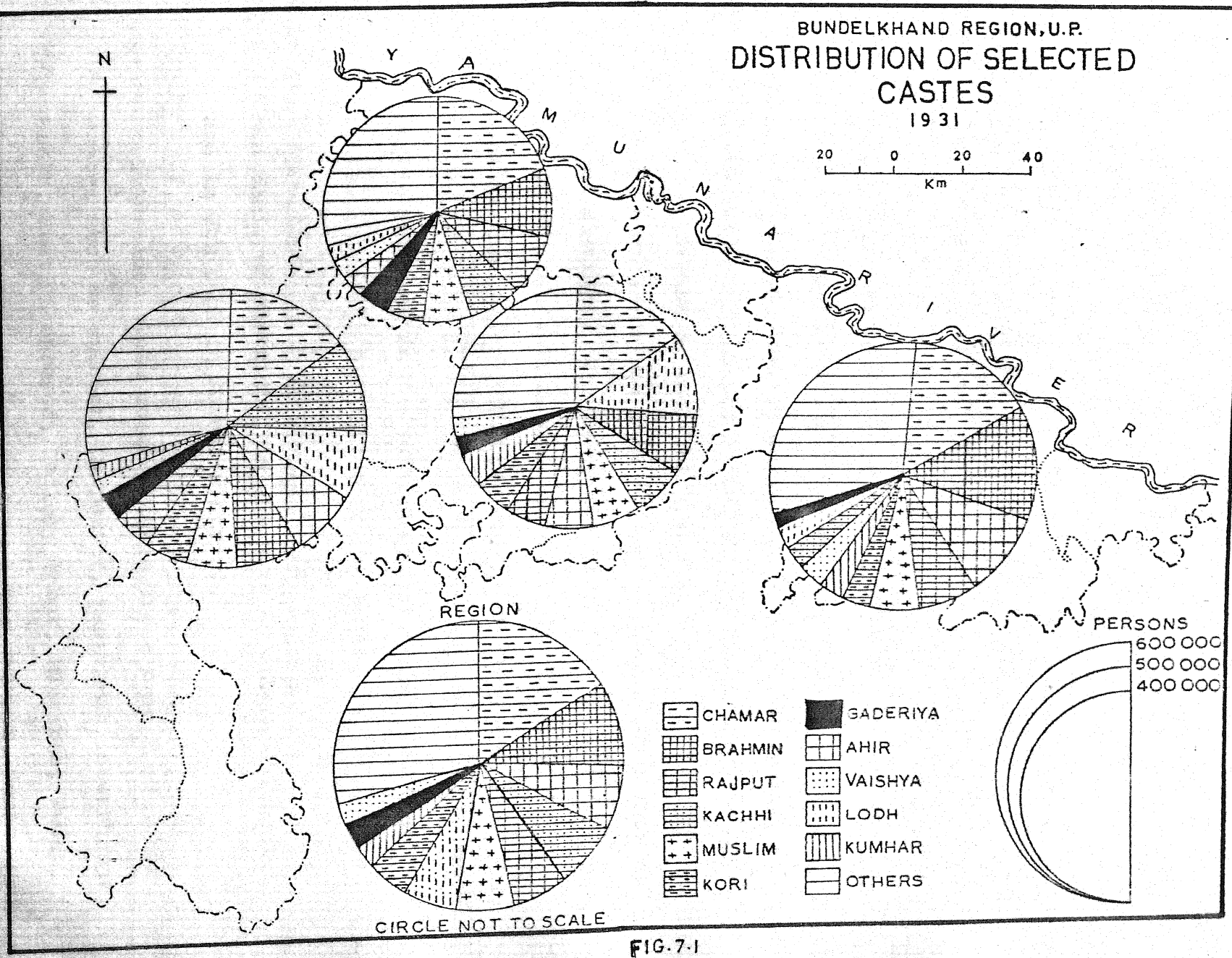
BUNDELKHAND REGION, U.P.
DISTRIBUTION OF SELECTED CASTES
1931
N
20 0 20 40
Km
YAMUNA RIVER
REGION
PERSONS
600 000
500 000
400 000
CHAMAR
BRAHMIN
RAJPUT
KACHHI
MUSLIM
KORI
GADERIYA
AHIR
VAISHYA
LODH
KUMHAR
OTHERS
CIRCLE NOT TO SCALE

FIG. 7-1

proportion is noted in Banda district but in Jhansi and Hamirpur districts, the Ahirs are in 4th and 6th ranks respectively. The population of Kachhi (6.99%) proportionally stands in 4th rank not only in the region but also in Jalaun and Hamirpur districts (Fig. 7.2D) whereas in Jhansi district it is in 2nd rank. The Rajputs (6.35%) are in 5th rank in the region but their population is very unevenly distributed in the region. Consequently they are in 3rd rank in Jalaun, in 4th rank in Banda and in 7th rank in Hamirpur district. The same is the case with population of Lodh which stands in 7th rank in the region whereas in 2nd rank in Hamirpur and in 3rd rank in Jhansi district. The Lodhs are in small proportion in Jalaun and Banda districts. The Muslims (6.18%) are, more or less, evenly distributed in the region. They are in 6th rank in the region as well as in Jhansi district and in 5th rank in the remaining districts. The same is the case with population of the Koris, (4.47%). The Koris are in 8th rank in the region as well as in Banda and Hamirpur districts, in 6th rank in Jalaun district and in 7th rank in Jhansi district.

Besides these castes, there are a number of other castes such as sweeper, Carpenter, Washerman, Bharbhunja, Arakh, Bhat, Shephered, Tailor, Kahar, Kayastha, Kewat, Khangar, Khatik, Kumhar, Kurmi, Lohar, Barber, Sonar, Teli,

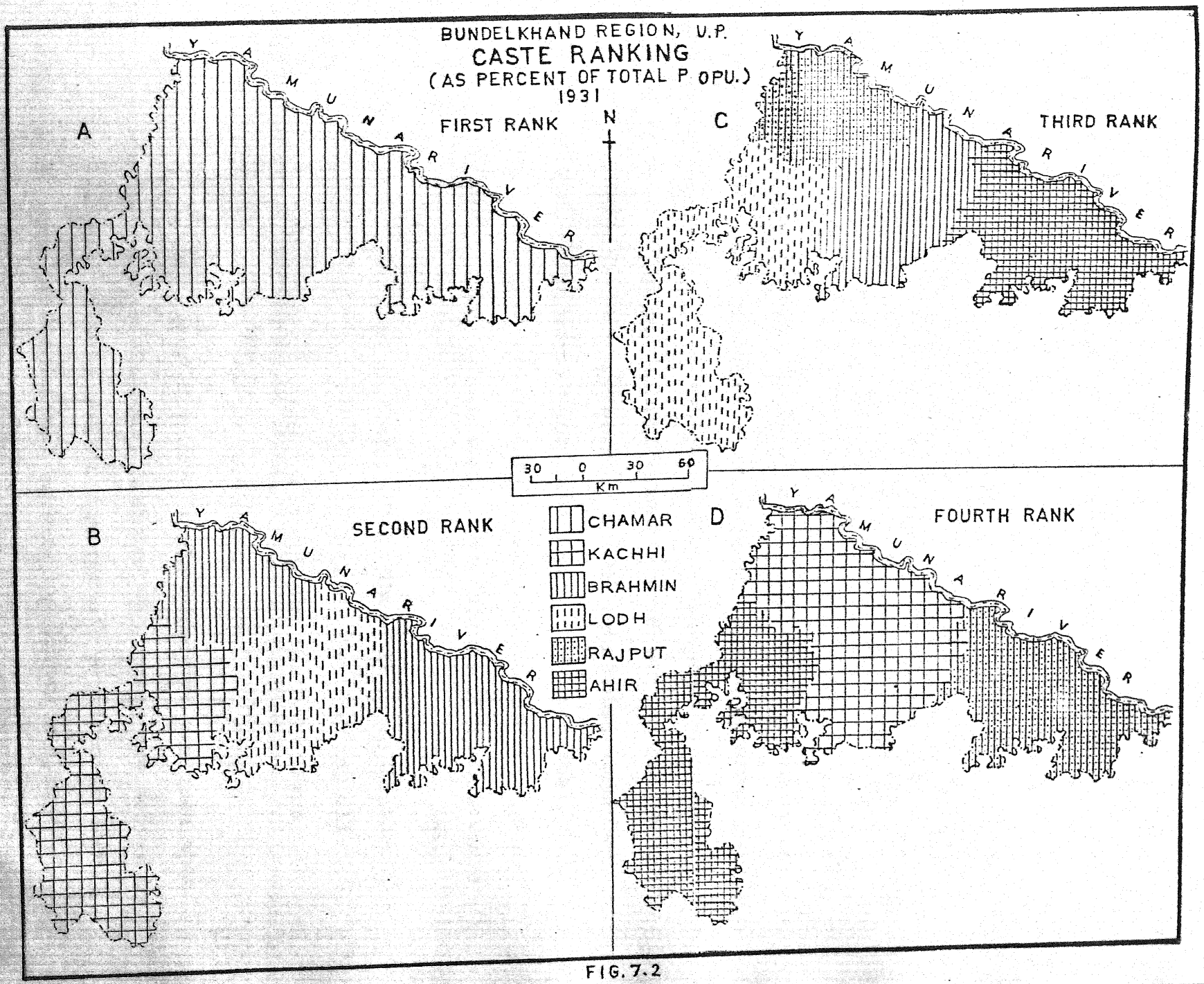
BUNDELKHAND REGION, U.P.
CASTE RANKING
(AS PERCENT OF TOTAL POPU.)
1931
A
FIRST RANK
B
SECOND RANK
C
THIRD RANK
D
FOURTH RANK
N
30 0 30 60
Km
CHAMAR
KACHHI
BRAHMIN
LODH
RAJPUT
AHIR
YAMUNA RIVER

FIG. 7.2

Vaishya etc. which are registered in very small proportion in the region.

Jajmani System and its Functional Pattern :

Different occupations of villages have been traditionally practised by the people of different castes like washerman, barber, carpenter, blacksmith, teli, bari, kahar, chamar, brahmin etc. This economic aspect of caste system in villages is expressed in 'Jajmani' system by which people of some castes have expectations to take some services from other castes[21]. For example carpenter and blacksmith make agricultural implements, barber cuts hair, washerman washes cloths, dom sweeps and cleans, brahmin contributes in marriages, deaths as well as other ritual works, poor persons of lower castes work in the fields of rich farmers as labourers. The family which takes services from other castes, is called as 'Jajman'[22]. There is no doubt that the vertical relation is found in 'Jajmani System' and all castes are linked in one thread on the basis of these services[23].

It was observed during field survey of the area that most families of Rajputs, Brahmins and Kurmis are served by traditional workers who provide certain services to them. Such types of traditional workers are known as 'Praja', in the study area. Among these, Barber, Carpenter, Blacksmith,

Washerman, Potter and Chamar are notable. In the absence of economic system of open market, the relationship between Jajman and Praja is not as master and servant. Jajman provides a traditional fixed payment of grains to his Praja as an enumeration[24]. Some times a patch of land is also provided to them as revenue free. Sometimes cash money (in marriages and other opportunities) as well as free food (in festivals, marriages, death etc.) are provided to them. If need arises, money is given to them as loan at low interest. All these rebates represent the power of this system and have more value than actual cash payment. The main role of this system is to provide plenty supply of labour to rich farmers as well as to delimit the dynamism of lower castes which, in turn, helps to note that sometimes a 'Praja' has to do work in many villages due to lackness of Jajmans in one village. Jajmani rights are considered as property which is transferred from grandfather to father and from father to son in hereditary system[25].

Like land, Jajmans are also divided among brothers in the time of family partition. The relation between Jajman and Praja are hereditary and a shelter or Jajman can not deliberately change his traditional 'Praja'. In the same way, a 'Praja' also can not change his shelter without permission of his shelter as well as his caste. Mostly Praja depends on mercy of land owners who do not

hesitate to exploit him, if chance comes.

Intra-Caste Relations :

The relation system is one of the most important aspects of traditional system in the study area. The members of one caste have made their relations with others by marriages relatedness as well as kinship. Among these relations, marriage is the main. It was observed that these relations are made at different distances by different castes. For example, the maximum distance of marriage is marked about 100-350 kms, 25 to 150 kms and 10 to 35 kms in high, backward and untouchable castes respectively.

In fact, relatedness is major system in intra-caste relations. It does not provide only permanancy to social organisation but also introduces the fundamental base for establishment of family[26]. In this way, these relations issue guidance to the political-economic inter-village relations[27]. Inter-marriage, control on food and drink, separate caste judiciary, specific cultural traditions, view of untouchability and 'Dharm' and 'Karm' are the disturbing elements to caste unity in the villages but its unitary attitudes are also present there.

Inter-caste Relations :

The dominance (in land ownership) of Brahmin and Kshatriya castes is almost in all the villages of the study area. Brahmin, Kshatriya, Kurmi, Muslim and Ahir still are powerful due to landownership, educational advancement, political approach, richness etc. The village communities have been related to each other in economic and religious activities. At the time of 'Jajmani System', all castes depends on each other at village level and were well cautious to this originality. Half yearly payment of grains to the potter, Blacksmith, Carpenter, washerman and Nai etc. was the proof of inter-dependence. The system of Jajmani may be noticed today also in the region as discussed in foregoing pages. Inter-caste relationship can be clearly explained with the help of Religious Secular and Absolute Caste dominance Models which effect the Spatial Organisation of castes in rural settlements as a centripetal and centrifugal forces respectively. The concept of social distance and its functioning, which forms organised spatial culture, has great importance in analysing the social structure of village community[28]. Applied spatial structure in cultural personality of an Indian village is the result of both models[29] discussed below :

The Religious Secular Model :

The division of different communities and hierarchical orders in Indian Society have been basic factors in caste system. The Hindus have been more influenced from the traditional rigidity of caste and varna than any other Indian religious community because the concept of purity and impurity has been rigid and wide in Hindu religion. The main characteristics of Hindu caste system have been based on social and caste heirarchy which has paid active role in organising Hindu society with its constancy and rigidity. This system is termed here as religious secular model.

The religious secular distances among different castes express differential pattern in spatial social organisation. Singh has observed "the concept of four varnas and Panchaj (untouchables), caste, system, Jajmani system, the feeling of purity and impurity explain the meaning of religious secular distances on one hand and determine theoretically the function of social system as well as morphological pattern on the other[30]. The place of each caste in local social hierarchy is not oftenly clear but it is true that the Brahmins gain the highest rank in this social hierarchy. Other castes gain varying places and most of the people know who is Brahmin and who

is untouchable. Consequently two types of Mohallas (Touchables and Untouchables) are very oftenly found in the villages due to the effectiveness of religious secular model. Although there is no physical barrier between the two, cultural and social dichotomies are established due to secular distances.

In fact, secular distance among different caste groups is the result of the concept of purity and impurity. The higher castes recognised themselves as pure in comparision to the other castes and tend to have less physical contact to maintain their highest level. This feeling has compelled different castes to accomodate separately. The wind direction has been considered as a main physical factor in the morphological development of a village. That is why the houses of Brahmins and people of middle castes were erected in the direction from which wind comes first. Generally, Ponds, lanes and roads separate the Mohallas. Padari, Bachhondha, Sultanpura, Reruwa and Ballan villages are the example of a such model. There are various tolas (Mohallas) like Brahmin Tola, Kshatriya Tola, Kurmi Tola, Chamrauti Tola etc. which are developed separately from each other. Such types of settlement patterns represent the separation of various castes. Every hamlet also have its separate homogeniety as well as social scope, however, these are closely related to each other by the Jajmani system.

Absolute Caste-Dominance Model :

Social stratification is fundamental factor of social economic cultural and political organisation[31], but all castes are closely related to each other by functional inter-dependence. In this way, socio-economic dominance, land occupance, numerical majority, presettled dominance are the major factors which are involved in this model. Such pattern are formed by force and the control on land resources. The dominated families or clans or castes provide more facilities like supply of primary needs, livelihood sources, houses, security as well as freedom of walking etc. to the most of the villagers. Thus they have played a major role in determining the socio-economic pattern of villages. In this context, the role of various high castes like Brahmin, Kshatriya, Kurmi have been much significant because they have occupied much land resources rather than others in the whole region. It is clear from the morphological study of Sultanpura, Bamhaura and Bachhondha villages. Absolute dominance model is mainly decided by economic power, but numerical majority is also important factor. Generally lower castes are much in number in most of villages, but due to the less land in their possession, they secure low status in the society. Inspite of knowing the fact that low caste people are untouchables, Rajput as well as other h i g h

castes depend on them for agricultural and other socio-economic services. This attitude has made closeness compulsory to the caste-settlement pattern. The controlling factor to this pattern is termed as social centrifugal force which provides good opportunity for the development of dense settlement pattern. It may be observed that twenty-two castes inhabitat Talhati Kalinjar village where they live near to each other. The Brahmin families which are thirty in number, are inhabited in the north direction of Talhati Kalinjar, lower castes like Khatik, Dhobi, Mehtar, Potter are in the south and western direction. The remaining castes are inhabited in mixed form. The Brahmins who occupy much land (45.59%) have always paid effective role in settlement pattern as well as socio-economic and political life of village. In the same way, the landownership as well as presettled effectiveness of Kshatriyas and Brahmins in Sultanpur, Reruwa, Talhati Kalinjar villages decided the settlement patterns of castes in the villages. Now caste obsolutness has weakened the feeling of purity and untouchability, therefore the things which were considered religious in the past, are not now in fashion. Now land dominance is not the measurement of caste-dominance. The government services and more income available to the lower caste members have much affected to the power of Kshatriyas and Brahmins. Besides, their falling economic conditions have compelled to sell the land to maintain

their social prestige. The lower caste inhabitation near to higher castes in one or more villages shows the example of this exception. Scheduled caste settlement in north direction of Chhayan village near to Kshatriyas residence is the example of it. In the same way, Kachhi, Kurmi, Ahir castes which have been placed after high caste in relligious secular model, are dominating in Chakatuki, Karaundi and Kalwara Khurd villages due to much land. There is also a notable fact that caste settlement pattern is totally different from Kshatriya dominating villages. In Kshatriyas dominance villages, their residences are in middle part of the villages. Servant castes, agriculturists as well as lower castes residences are near to them, but such type of settlement patterns are not noticed in other villages.

Family Structure and Organisation :

Family has its important place in social organisation of village communities. Its value lies not only as a effective controlling factor to the socio-economic activities but also for Hindu religion. Family is the primary unit of society whose existence and continuity is not possible without it. Due to being a base of social organisation, changes in family structure cause to the social changes. Therefore to evaluate the social change, the study of family structure and its changes is necessary.

Two types of families : nuclear and joint are noticed in the region. In the present study 'Joint Family' is considered as that family in which the members of less than three or more generations live together and they are closely related to one another by property, income, mutual rights and duties, fooding and obligation[32]. When a person lives separately from his father with his wife or unmarried sons, the family is considered as nuclear family.

Occupational Structure of Castes :

It becomes obvious from the study of sampled villages that occupations of different castes are not completely castwise, but economic system of villages is dependant on occupational specialization as well as inter-dependency. For example, agriculture was the main occupation of Kurmi, Lodh, Ahir, Arakh, and Kachhi, but at present, all castes whether high or low perform agriculture with their traditional occupation, if they have their own land. Trade and commerce was the main occupation of Teli, Gupta, Baniyan and Kalwars but today people of other castes are also engaged in it. Service was the main occupation of Kayastha, Brahmin and Kshatriya but today people of other castes are also employed in various services. Labouring has been performed only by lower castes like Chamar, Kori, Khatik, Kewat etc. but nowadays other castes also adopt it in workless time or due to poverty. Howsoever, there are so many

occupations like ritual works, hair cutting, washing, carpentering, Blacksmithy, gold-smithy, sweeping, pottering etc. which are in possession of some specific castes. There services can not be performed by other castes. In this way, the tradition has provided certain status as well as source of livelihood to specific caste group in the community structure.

Although every caste has its own specific traditional occupation[33], it does not mean that all members of the caste practise it and also performing the traditional occupation does not mean that they do not perform any other occupation.

In fact, there are some non-traditional occupations which are profitable from the economic point of view, therefore, every member of every caste is free to do any occupation for his livelihood[34].. Brahmin do agricultural work on their Land as well as ritual works in the village. Potter, Dhobi, Blacksmith, Carpenter, Nai etc. perform their traditional occupations. No body can restrict them, if they also work in farmers' fields at the time of sowing and cutting of harvests. Fact is that there is high demand of agricultural labourers in the villages now days, therefore, the people of traditional occupations are pursuaded to send their wives, sons and daughters for agricultural works. Inspite of this, every caste is related to its specific

occupation as well as social traditions.

Inter-Village Organisation :

One characteristic of traditional social organisation of the study area is reflected in inter-village organisation. This organisation is noticed in two forms :-

(i) Caste Panchayat and

(ii) Inter-Village Organisation.

According to organisation of village castes and the social restrictions among them, there is a caste Panchayat for a particular caste of a group of villages. Such Panchayats are of two types: Intra-village and inter-village. Such Panchayats are found in a group of 10-20 villages for some castes of the study area. Such Panchayats hear and tackle the cases of break of caste traditions and caste dispute. There is some similarity in functioning of caste Panchayat and village Panchayat in which old experienced persons hear and decide the disputes between the two villages, if it is not related with particular caste. It is not unnecessary to mention the functioning of legal village Panchayat which is political and administrative by nature. These Panchayats have created jealousy in the villages because dominant castes quarrel with each other for their prestige and respect.

Fundamental Characteristics of Villages and Process of Changes in Socio-Economic Structure :

It is basic fact that the factors which control the resources of an area, control to the society also. Local power originates and grows from land which is the only source of money and is, therefore, pre-requisite for the rise of a caste. Land is main base of property, respect and prestige in rural society. A caste becomes dominant when it is locally much in number and economically and politically influential. Thus population and land occupance should be considered as specific case in determining the economic hierarchical order of a caste in the study region.

Out of total 2426 families of 20 villages, the percentages of Chamar, Kurmi, Kshatriya, Brahmin, Kachhi, Potter, Ahir and Gupta families are 14.34, 12.08, 12.04, 9.52, 8.86, 4.16, 3.59 and 3.50 respectively (Table 7.2). The remaining castes such as Teli, Carpenter, Blacksmith, Nai, Dom, Kayastha, Gadaria are negligible in proportion. Kurmi, Kshatriya, Brahmin, Kachhi are the dominating castes which occupy 23.62%, 25.52%, 13.98%, 7.23% of the total cultivated land respectively in the villages. The potter (4.22%), Ahir 3.48%) and Gupta (3.39%) are next to these castes, they occupy 1.48, 2.25 and 3.15 percent of total cultivated land respectively. Other castes of the villages are carpenter, Blacksmith, Kayastha, Kori, Gadaria, Dhobi, Khatik and

Table 7.2 : Castewise Socio-Economic Structure of Families in percentage.

| Caste | % of total families | Population as % of total castes | % of total populations as Earners | Dependants | Out-earners | Literates | Occupied land in acres | Percentage to total occupied land | Per capita land in acres | Per acre population pressure | Rank order |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Brahmin | 9.52 | 9.76 | 33.35 | 66.65 | 3.56 | 49.19 | 2907 | 13.98 | 1.67 | 0.60 | 5 |
| Kshatriya | 12.04 | 12.07 | 33.65 | 66.34 | 4.97 | 47.59 | 5306 | 25.52 | 2.46 | 0.41 | 2 |
| Ahir | 3.59 | 3.48 | 37.14 | 62.86 | 4.66 | 12.29 | 469 | 2.25 | 0.75 | 1.33 | 10 |
| Kurmi | 12.08 | 13.59 | 32.15 | 67.85 | 3.42 | 34.50 | 4911 | 23.62 | 2.02 | 0.49 | 3 |
| Kachhi | 8.86 | 8.72 | 42.80 | 57.20 | 4.76 | 19.92 | 1503 | 7.23 | 0.97 | 1.04 | 7 |
| Teli | 1.53 | 1.71 | 35.41 | 64.59 | 4.26 | 33.11 | 236 | 1.13 | 0.77 | 1.29 | 9 |
| Black-smith | 1.77 | 1.59 | 37.46 | 62.54 | 2.83 | 19.43 | 185 | 0.89 | 0.65 | 1.53 | 12 |
| Carpenter | 1.98 | 1.88 | 37.80 | 62.20 | 5.36 | 20.23 | 159.5 | 0.76 | 0.47 | 2.10 | 14 |
| Nai | 1.03 | 1.06 | 35.26 | 64.74 | 4.21 | 18.94 | 65.5 | 0.32 | 0.34 | 2.90 | 17 |
| Potter | 4.16 | 4.22 | 41.03 | 58.97 | 2.52 | 12.74 | 308.5 | 1.48 | 0.41 | 2.44 | 16 |
| Dhobi | 2.14 | 1.76 | 30.57 | 69.43 | 4.46 | 29.62 | 217 | 1.04 | 0.69 | 1.45 | 11 |
| Chamar | 14.34 | 12.51 | 38.26 | 61.74 | 7.75 | 20.69 | 941.5 | 4.53 | 0.42 | 2.37 | 15 |
| Kori | 2.64 | 2.14 | 35.60 | 64.40 | 7.33 | 19.89 | 131.5 | 0.63 | 0.34 | 2.90 | 17 |
| Mehtar | 1.40 | 1.40 | 34.00 | 66.00 | 6.00 | 8.00 | 25 | 0.12 | 0.10 | 10.00 | 20 |
| Kayastha | 0.49 | 0.51 | 29.67 | 70.33 | 6.59 | 68.13 | 157 | 0.76 | 1.72 | 0.58 | 4 |
| Muslim | 3.17 | 2.80 | 33.87 | 66.13 | 4.81 | 29.06 | 299 | 1.44 | 0.60 | 1.67 | 13 |
| Gupta | 3.50 | 3.39 | 37.19 | 62.81 | 1.16 | 53.72 | 655 | 3.15 | 1.08 | 0.92 | 6 |
| Gadariya | 1.57 | 1.26 | 38.57 | 61.43 | 1.79 | 17.04 | 187 | 0.90 | 0.84 | 1.19 | 8 |
| Lodh | 2.31 | 2.87 | 33.20 | 66.80 | 1.95 | 43.36 | 1395 | 6.71 | 2.72 | 0.36 | 1 |
| Khatik | 2.10 | 2.95 | 39.92 | 60.08 | 2.85 | 13.88 | 172 | 0.83 | 0.33 | 7.21 | 19 |
| Others | 9.77 | 10.33 | 38.39 | 61.61 | 3.80 | 9.54 | 563 | 2.71 | 0.30 | 3.28 | 18 |
| Total | 100.00 | 100.00 | 36.23 | 63.77 | 4.41 | 29.12 | 20793.5 | 100.00 | 1.16 | 0.36 | |

N.B.: Out-earners - Those persons who work out of the village.

Source : Field Survey.

Mehtar etc., but their number as well as land occupance is insignificant.

The region is most backward as most of the villages families are economically in low income group. It is interesting to note that more than half (57.50%) of total families are in low income group, 29.43% in Medium income group and 13.07% in high income group Table (7.3). It may be clearly noticed from the Table 7.3 that above 25.35% families of the Kayastha, Gupta, Kshatriya, Kurmi and Brahmins are in high income group because these castes have much land as well as other income sources like services, business etc., while in other castes it is lacking. On the other hand, nearly 80 percent families of Chamar, Kori, Potter, Khatik, Dhobi, Teli, Kachhi, Mehtar, Blacksmith, Nai are in low income group on account of shortage of land as well as othersources of income. Therefore, it may be concluded that the living standard of Brahmin, Kurmi, Kshatriya castes is better than that of other castes.

In the sampled village 29.12 percent of total population is literate. Higher percentage of literacy is recorded in Kayastha (68.13%), Brahmin (49.19%), Kshatriya (49.59%), Gupta (53.72%), Kurmi (34.50%) and Teli (33.11%), families. Better economic condition as well as cautiousness to the education are responsible factors for this while it is neglegible in Chamar (20.69%), Kori (19.89%), Blacksmith (19.43%), Gadaria (17.04%) Khatik (13.88%) and potter (12.74%)

Table 7.3 : Caste-wise Income Levels of Families in Percentage.

| Castes | Low | Medium | High |
|---|---|---|---|
| Brahmin | 33.33 | 41.99 | 24.68 |
| Kshatriya | 33.56 | 38.02 | 28.42 |
| Ahir | 63.22 | 27.59 | 9.19 |
| Kurmi | 29.35 | 48.46 | 22.19 |
| Kachhi | 59.53 | 31.63 | 8.84 |
| Teli | 54.05 | 43.24 | 2.71 |
| Blacksmith | 88.37 | 9.30 | 2.33 |
| Carpenter | 72.92 | 25.00 | 2.08 |
| Nai | 80.00 | 20.00 | - |
| Potter | 78.22 | 19.80 | 1.98 |
| Dhobi | 73.08 | 25.00 | 1.92 |
| Chamar | 89.66 | 9.19 | 1.15 |
| Kori | 87.50 | 10.94 | 1.56 |
| Mehtar | 82.35 | 14.71 | 2.94 |
| Kayastha | 25.00 | 41.67 | 33.33 |
| Mulsim | 67.53 | 25.98 | 6.49 |
| Gupta | 20.00 | 47.06 | 32.94 |
| Gaderia | 57.89 | 34.22 | 7.89 |
| Lodh | 26.79 | 23.21 | 50.00 |
| Khatik | 62.75 | 33.33 | 3.92 |
| Other castes | 77.64 | 21.10 | 1.26 |
| Total | 57.50 | 29.43 | 13.07 |

Level of low income Rs. 1800.00 per year

Level of medium income Rs. 1800-3600 per year

Level of high income Rs. Above 3600 per year.

etc. because these castes are economically poor but today facilities like scholarship, book-aid are provided by government and their cautiousness towards education have brought slight change in literacy of these castes.

Occupationally most of the families (74.64%) of surveyed villages are engaged in agriculture, while 33.42% are engaged in labouring, 21.64% in traditional occupation, 8.65% in services and 3.83% in other activities. (Table 7.4) Agriculture is the mainstay of the village economy therefore the percentage of agricultural families is highly (60.10%) available in Brahmin, Kshatriya, Kurmi, Ahir, Kachhi, Gaderia, Dhobi, Blacksmith etc. due to much land in comparision to the other. While it is below 60 percent in Chamar, Muslim, Gupta, Khatik etc. because they have no much land occupance and also these families are engaged in labouring or other daily works.

More than 50% families of Blacksmith, potter, carpenter, Nai and Mehtar are engaged in their traditional occupations and also they are performing agriculture, services and other occupations, but the percentage is insignificant in other activities. The percentage of other caste families engaged in traditional occupations is less in Brahmin (19.91%), Kachhi (19.06%), Muslim (10.38%), Kori (9.37%), Khatik (15.68%) etc. because they have other sources

Table 7.4 : Caste - wise Occupational Structure of Families in Percentage.

| Castes | At present | | | | | | Before Twenty years | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total families | Traditional | Agriculture | Labouring | Service | Other Works | Total families | Traditional | Agriculture | Labouring | Service | Other works |
| Brahmin | 231 | 19.91 | 98.27 | 1.73 | 22.08 | 6.07 | 186 | 31.72 | 98.38 | 3.76 | 10.21 | 1.21 |
| Kshatriya | 292 | - | 100.00 | - | 10.96 | 3.42 | 237 | - | 100.00 | - | 5.90 | 3.37 |
| Ahir | 87 | 5.75 | 86.20 | 35.63 | 4.60 | 1.15 | 64 | 15.62 | 82.81 | 46.87 | - | - |
| Kurmi | 293 | - | 100.00 | 2.04 | 12.97 | 5.12 | 237 | - | 100.00 | 5.48 | 5.48 | 0.42 |
| Kachhi | 215 | 19.06 | 82.79 | 86.04 | 4.65 | 1.39 | 159 | 30.81 | 72.32 | 56.60 | 1.26 | - |
| Teli | 37 | 35.13 | 78.38 | 10.81 | - | 13.51 | 26 | 74.60 | 69.23 | 19.23 | - | - |
| Black-smith | 43 | 74.41 | 88.37 | 16.28 | 2.32 | - | 33 | 90.91 | 84.84 | 27.27 | - | - |
| Carpenter | 48 | 72.92 | 81.25 | 18.75 | - | - | 32 | 76.25 | 75.00 | 31.25 | - | - |
| Barber | 25 | 100.00 | 88.00 | 16.00 | - | - | 18 | 100.00 | 94.44 | 44.44 | - | - |
| Potter | 101 | 74.25 | 92.08 | 43.56 | 2.96 | 0.99 | 74 | 77.03 | 99.73 | 68.91 | 1.35 | - |
| Washerman | 52 | 59.61 | 84.61 | 48.07 | 9.62 | - | 41 | 78.05 | 60.97 | 68.29 | - | - |
| Chamar | 348 | 28.45 | 59.19 | 82.47 | 6.32 | 0.29 | 258 | 49.61 | 52.32 | 81.78 | 1.55 | - |
| Kori | 64 | 9.37 | 81.25 | 79.68 | 3.12 | 6.25 | 47 | 31.92 | 63.82 | 76.59 | - | - |
| Sweeper | 34 | 70.58 | 8.82 | 23.52 | 17.64 | 5.88 | 21 | 90.48 | 4.76 | 38.00 | 9.52 | - |
| Kayastha | 12 | - | 91.66 | - | 50.00 | 16.66 | 8 | - | 87.5 | - | 62.5 | 25.00 |
| Muslim | 77 | 10.38 | 50.64 | 51.94 | 5.19 | 6.47 | 56 | 26.78 | 41.07 | 44.64 | 1.78 | 3.57 |
| Gupta | 85 | 32.94 | 54.11 | - | 8.23 | 22.35 | 56 | 48.21 | 46.43 | 10.78 | 3.57 | 21.42 |
| Gaderia | 38 | 15.78 | 89.47 | 2.63 | 2.63 | - | 26 | 23.07 | 88.46 | 34.61 | - | - |
| Lodh | 56 | - | 98.21 | 10.71 | 7.14 | 7.14 | 46 | - | 97.82 | 10.86 | 4.34 | 2.17 |
| Khatik | 51 | 15.68 | 50.98 | 76.47 | - | - | 38 | 47.36 | 23.68 | 57.89 | - | - |
| Other caste | 237 | 18.14 | 83.12 | 61.60 | 5.48 | 5.48 | 159 | 26.41 | 57.86 | 75.47 | 5.03 | 6.28 |
| Total | 2426 | 21.64 | 83.30 | 33.42 | 8.65 | 3.83 | 1822 | 30.79 | 76.12 | 36.44 | 4.06 | 2.14 |

Source: Field Survey.

for their livelihood besides agriculture.

The highest percentage of labouring families (above 50 percent) is recorded in Chamar, Kachhi, Kori, Dhobi, Muslim, Khatik castes etc. but it is insignificant in Brahmin, Kshatriya, Kurmi, Teli, Gupta, Kayastha, Nai, Carpenter and Blacksmith castes.

Besides these, other economic activities like services, small industries, shopping are also performed by the different caste families of the villages. Mostly Brahmin, Kurmi, Kachhi, Kshatriya families are engaged in it.

Today the people are much in favour of nuclear families. It has been found that 72.23 percent and 24.77 percent of total families are nuclear and joint respectively. Mostly 70 percent families of the Chamar, Dhobi, Kori, Kachhi, Khatik, Ahir, Potter, Carpenter, Nai, Blacksmith etc. are liking to live in nuclear family, but the percentage of nuclear family is low in Kurmi, Kayastha, Brahmin and Kshatriya caste families, because they have much land as well as they all are educated. On the other hand, the percent of joint families is opposite to it. Economic burden and mutual tension are the responsible factors for the break of joint family system in the villages.

Major Forms of Changes in Traditional Social System :

The process of change in traditional social structure

and factors have been analysed here on the basis of the conclusions drawn from the study of sampled villages.

1. Some Aspects of Caste Mobility :

Higher and low caste are often predecided today but fluctuations, changes and abatements have begun to happen between these two points for decades and are active today also. These significant changes are -

(i) Increasing The Feeling of Casteism :

Caste is an important part of traditional religion and is governed by it. Persons avail certain benefits from joint family and caste. If a caste does not represent its monopoly in the society, it certainly represents cultural homogeneity upto some extent. There are handful of persons who recognise casteism as a national curse. There is a small fraction of total castes in 20 villages, which desires that caste system should be abolished. Yet the caste feeling is deep rooted in them also when the question of caste benefits arises. Thus it is true that majority of people does not see any evil in caste system but the reservation of certain castes in getting education, employment and other socio-economic benefits encouraged caste feeling very much. Now a days, the caste feeling has made its place in every heart of persons in the region. That is why castes associations, organisations are emerging like trade unions.

The formation of Brahmin Samaj, Prajapati association, Yadava association, Kurmi association etc. are the burning examples. The lecturers delivered by leaders of different associations in annual meetings are creating the gaps among the castes. Though efforts are being made by Government to abolsih caste feeling, it is increasing due to these types of associations.

(ii) Abatement in Practiced Caste-wise Rules :

Although caste feeling increased, the abatements have been noticed in traditional practices. It is exhibited in drinking, fooding and other behaviourial activities of people of the study villages. For example about 90% people have no desire to take food at the residence of lower castes, but the higher caste (excluding elders) people can provide food to any low caste man on their pot at present social and political environment or they themselves can take 'PAKKA food' at the residence of lower castes. It is notable fact that all castes fallow this rule for lower castes to themselves. These rules are limited only to the villages but all these are diminishing in urban areas. The another significant change is observed in behaviour. Sitting with lower castes on the same cot has been usual in medium and low castes but not in higher castes. However it is now being relaxed in higher castes also. The economic depri-vation, urbanisation, educational progress are the responsible

factors which have much influenced to the social prestige issue of the higher castes. Abatements in behaviourial pattern are not similar in all villages. It is noticed less and more in the villages dominated by higher and low castes respectively. For example, the Backward and low castes always pay their attention towards their prestige while sitting with higher castes in Sultanpura (57.45% Kshatriya dominance), Bamhaura (67.79% Kshatriya dominance), Reruwa (60% Brahmin dominance), Pura Kalan (34.00 Kshatriya dominance) and Bachhondha (57.00 Kshatriya dominance) but it is insignificant in the Chandpura (15.73% Kachhi dominance), Upari (23.90% Kachhi and 20% Kurmi dominance), Karaundi (20% Kurmi and 13.33% Kachhi dominance) Chakatuhi (17.01% Kachhi and 20.41% Chamar dominance), Chhayan (29.70% Kachhi), Khadaini (28.74% Kurmi), Patori (66.67% Potter and Gadaria) Rehuntia (40.87% Kurmi), Kuthondh (30.38% Lodh) and Pandari (59.50% Chamar and Kurmi) villages due to dominance of backward and lower castes in these villages. Here they do not feel any complexion in mind while sitting with higher castes and also backward castes of these villages give preference to sit with lower castes.

(iii) Decrease in the Feeling of Untouchability and Impurity:

The feeling of untouchability has been peculiar in Hindu society. The mutual brotherhood, sympathy, kindness etc. are externally observed in behaviours of the villagers but cultural factors of high and low castes, untouchability etc. have much influenced their behaviours. It has been

empirically found that higher caste people do not take food of lower caste people due to the feeling of purity and impurity but they have no objection to take Dal, Rice, Ghee and other raw materials of low castes. Nevertheless, they do not practise these rules in hotels as well as in tea stalls. In this context, the educated and service man of high castes told that they were unable to do so because they would be bycotted from the society. Therefore it is clear that the feeling of pure and impure is due to social pressure. The feeling of untouchability has been decreasing for recent years. It is the consequence of Sanskritization.

(iv) Sanskritization :

The form of caste mobility is clearly reflected in the process of Sanskritization. It has been seen in last decades that the highest as well as lowest groups of Hindu society, influenced from westernisation, are gradually divorcing their traditional values. For examples the potter, Chamar, Kori castes of Kuthondh village (Jalaun tahsil) are keen interested to take vegetarian food. The Ahirs of Ballan (Naraini Tahsil), Lodh of Kuthondh (Jalaun Tahsil) bear 'Yagyopavita' now. In this way, these castes are trying to rise their social status by adopting the vegetarian food, prestigeous works of the Brahmin as well as other higher castes. The tendency, to add surname of higher castes, has increased. Thus, sanskritization is

that process by which lower Hindu castes or tribes changes their customs, views and living method etc. in the way of 'dwij' castes[35].

2. Changes in Jajmani System and Inter-Caste Relation :

Based on service exchange, Jajmani system is being disintegrated rapidly due to the changes in traditional socio-economic values by the new socio-economic development programmes. People are not only resigning their traditional services rendered to 'Shelter' (Jajman), but also their traditional occupations. It is clear from the caste-wise occupational structure (Table 7.4) that mostly families have left their traditional occupations and the process is continuing today. With the result, Jajmani system is weakening day by day. Therefore it seems possible that Jajmani system will diminish with time and society will advance towards the high economic development and modern social structure[36].

The associations of different castes prevailing in Jajmani system have been badly influenced by the socio-econimic development in different communities. The meeting of caste representatives of different areas and also their discussion on public interests and problems have become easy due to regular postal services, road and rail transport and publications of linguistic letters and books etc.

It is evident from the complaints of the higher castes of the study villages that landlords have not such type of homageness towards labourers as was before because of their less economic influences on lower caste people. Consequently unity of villages and inter-caste relations have been weakning in various fields like political, social and economic etc. Due to economic development, the washerman and Chamars of the Budhiya village (Mauranipur Tahsil) have divorced their traditional occupations. Hence it is obvious that traditional occupations have been much influenced. It is also interesting to note that the Chamar, Arakh, Kori, Kachhi, Dhobi and other lower castes of the surveyed villages, who were serving as a ploughmen or labourers at the home of Brahmin, Kshatriya or other dominating castes are now performing agriculture. In this way it may be concludingly said that inter-caste co-operations as well as relations at village level are finishing day by day.

3. Occupational Mobility Among Castes :

The field survey reveals that the castes are leaving their traditional occupations and are adopting new economic activities due to changes in socio-economic structure. It is clear from the study of Kshatriya and Brahmin dominating villages (Sultanpura, Bamhaura, Bachhondha, Reruwa, Talhati Kalinjar, Chakatuhi) that these castes did not

perform agricultural work themselves (excluding some exceptions) due to Jajmani system in British period but owing to the abolition of this system, these castes are also doing agriculture.22.88% and 10.96% families of Brahmin and Kshatriya respectively are performing other services with agricultural work. It is also noticed that only 19.91% Brahmin families are performing their traditional priestal work which is less than that of before twenty years (31.72%). In this way occupational changes have been much in higher castes.

It is also notable that Ahir, Kurmi, Kachhi, Muslim, Nai, Kayastha etc. have not experienced significant changes in agricultural occupation, while Potter, Blacksmith, Carpenter, Chamar, Dhobi, sweeper have experienced much. For example 59.19%, 81.25% and 8.82% families of Chamar, Kori and Sweeper are performing agriculture today, whereas 20 years before the respective percentages were 52.37, 62.82 and 4.76. This occupational change in these castes is due to distribution of barren land to landless lower castes by the Government. It is also noteworthy that lower castes had to perform traditional services at the home of rich families at low daily wages before twenty years as well as their traditional works carried no significance. But today, the tendency of caste-wise traditional occupation structure of families is different among different castes (Table 7.4). For example 46.61% of Chamar, 31.92% of Kori, 90.48% of sweeper, 23.07% of Gadaria families were engaged

in traditional works. Now, the percentage has decreased to 28.45, 19.37, 70.58 and 15.78 respectively. This change is due to achieving good opportunity of employment in government services. But the occupational changes are less in Ahir, Kachhi and Nai castes because their traditional occupations are easy as well as profitable to them. 75.61% of the Teli caste families were engaged in their traditional occupation 20 years before, today the percentage fallen to 35.13 due to oil processing by machines. This type of change is insignificant in carpenter caste because skilled or unskilled persons of this caste get job in the city as well as in the villages to make agricultural implements. Dhobbi, Nai Blacksmith and Potter are the castes in which negligible changes may be observed because these castes earn their livlihood by doing work in both places city and villages.

The lower castes' people did the work as a labourers in 'Jajmani system' but various constitutional facilities have been provided by the legislative or parliament members as well as their regional significance has been recognised due to their regional majority. Consequently changes have come in their socio-economic life. The attitude of labouring has decreased from 36.44% to 33.42% in last twenty years. Land availability, job opportunity, loaning facilities, opening of tea and betel shops are the responsible factors to this. One fact which has been gathered durin the field survey is also noteworthy, Enumeration of agricultural

labouring is still provided today in the form of grains which is not sufficient for their livelihood. Therefore, they are compelled to adopt other occupations either at native or at other places. Consequently labourer problem is increasing in the villages day by day.

From foregoing discussion it may be concluded that the percentage of families engaged in traditional occupations has slightly decreased from 30.79 to 21.64 and the percentage of agriculturists has slightly increased from 76.12 to 83.30 percent as well as the percentage of labourers has decreased from 36.44 to 33.42.

4. Changing Face of the Family Structure :

There have been rapid changes in family structure due to westernisation, urbanisation, modern education, increase in facilities of communication especially cinema, freedom as well as increasing wave of equality in ladies and process of sanskritization. The feeling of individuality has increased, with the result, the feeling of disintegration of family has also increased. The family elders were given great honour in past, but today feeling of such respect has decreased, with the result, the percentage of nuclear families has increased from 68.94 to 75.23 and the percentage of joint families has decreased from 31.06 to 24.77 in the

last twenty years (Table 7.5).

Table 7.5 : Caste-wise Family Structure in percentage.

| Castes | At Prestnt Time | | | Before 20 years | | |
|---|---|---|---|---|---|---|
| | Total Families | Nuclear | Joint | Total families | Nuclear | Joint |
| Brahmin | 231 | 61.04 | 38.96 | 102 | 54.83 | 45.16 |
| Kshatriya | 292 | 63.36 | 36.64 | 136 | 57.38 | 42.62 |
| Ahir | 87 | 74.71 | 25.28 | 42 | 65.62 | 34.38 |
| Kurmi | 293 | 66.55 | 33.45 | 140 | 59.07 | 40.93 |
| Kachhi | 215 | 73.95 | 26.05 | 105 | 66.04 | 33.96 |
| Teli | 37 | 67.57 | 32.43 | 16 | 61.53 | 38.46 |
| Black-smith | 43 | 67.77 | 30.23 | 21 | 63.63 | 36.34 |
| Carpenter | 48 | 77.08 | 22.91 | 22 | 68.75 | 31.25 |
| Nai | 25 | 72.00 | 28.00 | 12 | 66.67 | 33.33 |
| Potter | 101 | 84.15 | 15.85 | 56 | 75.68 | 24.32 |
| Dhobi | 52 | 80.77 | 19.23 | 29 | 70.73 | 29.26 |
| Chamar | 348 | 70.51 | 9.49 | 205 | 79.46 | 20.54 |
| Kori | 64 | 84.37 | 15.62 | 36 | 76.59 | 23.40 |
| Sweeper | 34 | 82.35 | 17.65 | 15 | 71.42 | 28.58 |
| Kayastha | 12 | 75.00 | 25.00 | 5 | 62.25 | 37.75 |
| Muslims | 77 | 80.51 | 19.48 | 42 | 75.00 | 25.00 |
| Gupta | 85 | 72.94 | 27.06 | 39 | 69.64 | 30.36 |
| Gaderiya | 38 | 76.31 | 23.68 | 18 | 69.23 | 30.77 |
| Lodh | 56 | 78.57 | 21.43 | 34 | 73.91 | 26.09 |
| Khatik | 51 | 82.35 | 17.65 | 29 | 76.31 | 23.69 |
| Other castes | 237 | 83.54 | 16.46 | 119 | 74.84 | 25.16 |
| Total | 2426 | 75.23 | 24.77 | 1256 | 68.94 | 31.06 |

It may be evidenced from the table that the changes are noted more in lower caste families in comparision to backward and upper castes families. For example, 45.16% families of Brahmin and 42.62% families of Kshatriya lived in joint family 20 years before, but now 38.96 and 36.64 percent families of Brahmins and Kshatriyas live in joint families respectively while the percentage of Backward joint families like Ahir and Kurmi has decreased from 34.38 and 40.93 to 25.28 and 35.45 respectively in last 20 years. Decreasing percent of joint family is highly noted in lower castes like Chamar, Dhobi, Kori, Khatik, Sweeper.

Actually, the highest percentage of nuclear family in backward and lower castes is due to illiteracy and poverty. But in higher caste families, prestige of old time is remembered today also whereas other castes neglect it which is the stimulating element of a nuclear family.

5. Changing Face of Inter-Rural Organisation :

The tendency of changes in traditional social system may be also observed in inter-rural organisation, It is notable fact that there have been many changes in inter-rural organisation after Independence. The importance of caste-Panchayat has been only for lower and medium castes in limited extent while higher castes are neglecting their decisions today. With the result, the cases of caste panchayat as well as

rural organisation are tending to reach to judiciary courts.

Briefly, it can be said that the new dimensions of changes in socio-economic structure of the region have been added in last twenty years. Although the continuity of traditions is present in the region, abatements may be observed in them due to mechanisation, educational progress, job opportunities, sufficient income sources and developmental programmes of government. Due to better agricultural production as well as increasing communicational facilities, the standard of living is rising but the rate of change in socio-economic structure is very slow due to illiteracy, poverty and traditionalism. Therefore, there is a great need of rapid process of development and reforms in the study region.

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# CHAPTER VIII

## TECHNOLOGICAL DEVELOPMENT AND CULTURAL CHANGE

Man is, par excellence, a dominant factor in shaping and nourishing the culture. Every human society has its own culture. That is why members of a society have practices different from members of other society in so many important aspects. Culture is the cumulation of all the practices and behaviours that are naturally performed by the members of a society[1]. Generally, the changes in social values and behaviours are the root causes responsible for changes in culture. Social values especially influence the cultural and technological development, subject to the diffusion of knowledge and contact of people of different cultures. In short, cultural changes are caused due to the happenings which change the existing circumstances for new ones to be adopted. The main purpose of this chapter is to explain the cultural elements, process and factors of changes in the context of study area.

### Concept of Culture :

Every human society has its own way of life that is explained in form of 'Culture'. Developed equality and government policies laces the people in cultural unity on the basis of language, ideals, individual behaviour, mode of life and technology etc.[2] According to Taylor

"Culture is that complex whole which includes knowledge, belief, art, morals, law, custom and other capabilities and habits acquired by man as a member of society[3]." It is clear that culture is not gift of nature but of social discipline. Defining culture, Ralf Piddington has remarked" the culture of people may be defined as the sum of total of the material and intellectual equipment whereby they satisfy their biological and social needs and adopt themselves of their environment[4]." According to Hoebel "Culture is the sum total of integrated learned behaviour patterns which are characteristic of the members of a society and which are, therefore, not result of biological inheritance[5]." In the words of Herkovits "Culture is manmade part of environment[6]."

It may be concluded from the foregoing discussions that culture is an aggregate of material elements (machines, implements, furnitures, radio, watch, television, houses, temples, aero-planes, medicines etc.) and non material elements (belief, religion, customs, art, literature etc.). It is a matrix of perception from which can be apprehended the human world.

Pattern of Cultural Change :

It is the fundamental characteristic of culture that it is variable with time and space inspite of its rigid nature. The study area has passed through the processes

of different cultural changes in long duration of many ups and downs. These processes have been much active after INdependence due to development of new technology and inventions and rapid changes in social, political and economic institutions. In the study region, rapid changes have occurred in cultural values as w ell as ideals with the development of transport and communication, modern education, westernisation and urbanisation. In this way, cultural changes are exhibited in two major forms in the region as follows :-

(i) Material forms as technology, water management, electrification, industries and transport which are the carriers of the socio-economic and cultural changes and

(ii) Non-material forms which include values, ideals, beliefs, customs, traditions, religion as well as psychology and thinking.

Technological Development :

Technology is the systematic knowledge by which the use of implements and machines is possible in the society. It represents the active adjustment of man with nature and exploitation of resources from which man earns his bread and also expresses his social relations and the resultant mental views generated from those relations[7]. Many changes are witnessed in view, traditional modes of

life etc. with the technological developments[8]. It is the technology which has much influenced the human relations in the modern complex society. In the context of above technological processes, the study of agricultural mechanisation, water management, electrification, industrialization and transportation have been made on the basis of their existing distributional pattern and developmental processes.

Agricultural Mechanisation :

The study area is backward region and agriculture is performed on traditional pattern. The new inventions have less impact on the operation activity of the region. However, people are forwarding towards mechanised agriculture. They are now using winnowing fans, thrashers and iron-ploughs instead of old wooden ploughs and Bakhar. The distribution of agricultural implements in sampled villages is given in table 8.1.

The field survey reveals that the existing use of new agricultural implements is not satisfactory in the region, the production of food grains increased due to use of some implements, high yielding varieties of seeds, chemical fertilizers etc. The table (8.2) reveals that the number of ploughs, bullock-carts and crusher machines increased 9.24, 65.57 and 57.4 percent respectively

Table 8.1 : Distribution of Agricultural implements in Sampled villages.

| Villages | Bullock-carts | Iron plough | Fodder Machine | Tractor | Thrasher | Pumping set. |
|---|---|---|---|---|---|---|
| Sultanpur | 49 | 10 | 42 | 10 | 3 | 4 |
| Padari | 22 | 12 | 41 | 26 | 4 | 5 |
| Bamhaura | 64 | 7 | 76 | 3 | - | 4 |
| Kuthondh | 66 | 25 | 89 | 16 | 3 | 10 |
| Rehuntia | 57 | 30 | 66 | - | 4 | 17 |
| Patori | 5 | - | 21 | - | - | - |
| Tarhati Kalinjar | 42 | 29 | 23 | 3 | 2 | 18 |
| Ballan | 71 | 121 | 88 | 4 | 5 | 34 |
| Khadaini | 52 | 8 | 50 | 3 | 4 | 5 |
| Budhia | 85 | 10 | 95 | 5 | 3 | 5 |
| Mirchwara | 57 | 13 | 20 | 9 | 6 | 19 |
| Chhayan | 59 | - | 12 | 4 | 2 | 3 |
| Pura Kalan | 106 | 11 | 105 | 8 | 19 | 24 |
| Reruwa | 20 | 7 | 36 | - | - | 6 |
| Bachhondha | 27 | 7 | 40 | 2 | 3 | 12 |
| Kalwara Khurd | 30 | 12 | 41 | 2 | 1 | 4 |
| Chakatuhi | 39 | 20 | 35 | 1 | 1 | 3 |
| Upari | 40 | 10 | 29 | - | - | 4 |
| Chandpura | 50 | 12 | 38 | 1 | 2 | 8 |
| Karondi | 45 | - | 49 | 2 | 3 | 3 |
| Total | 986 | 344 | 996 | 99 | 65 | 188 |

in the Region between 1960 and 1983.

Table 8.2 : Distribution of Agricultural Implements in The Region (1960-83).

| Agricultural Implements | 1960 | 1983 | Percentage increase (+) and decrease (-) |
|---|---|---|---|
| Plough | 444,888 | 485974 | 9.24 |
| Bullock-cart | 207638 | 343783 | 65.57 |
| Crusher Machine | 1744 | 2744 | 57.4 |
| Tractor | 313 | 11628 | Unexpected increase |
| Diesel Irrigation Engine | 158 | 2199 | Unexpected increase |
| Electric Irrigation Engine | 11 | 254 | Unexpected increase |
| Speller | 5083 | 2215 | 56.42 |
| Harro or cultivator | N.A. | 28044 | |
| Thrashing machine | 762 | 2820 | Unexpected increase |
| Sprayer | N.A. | 312 | - |
| Drilling machine | 141 | 139866 | Unexpected increase |

Whereas beyond hope increase is noticed in the number of tractors, diesel and electric irrigation engines and some other modern agricultural equipments. The number of Speller decreased (-56.42%) due to impact of mechanisation in oil processing.

Management of Water Resources :

Water resource management plays an important role in the Socio-economic and cultural changes and spatial organisation of a region. Due to being agriculture as a main base of economy in the study region, it is much needed. In the earliest, tanks and ponds were constructed by the Chandela and Bundela Kings for irrigational purpose. The present Kiratsagar and Madansagar tanks of Mahoba bear testimony to such early efforts. After Independence, our national government started several irrigation projects in the region (Fig. 8.1A). The prominent among them are the following :-

Matatila Project :

This is multipurpose project for irrigation and power. It is located at a distance of 4.8 kms from Basai Railway station in the south-west and 6.4 Kms from Talbehat in the north-west. On the right bank of Betwa in Lalitpur tahsil, dam was constructed between the two rocky district. Its construction was started in 1952 and was completed in 1967. The length of this dam is 6436 meters with a height of 24.6 meters. The dam impounds 40,000 million cubic feet of water and irrigates an additional area of 165000 hectares of U.P. and M.P. There are two canal systems viz Bhander canal system and Gursarai canal

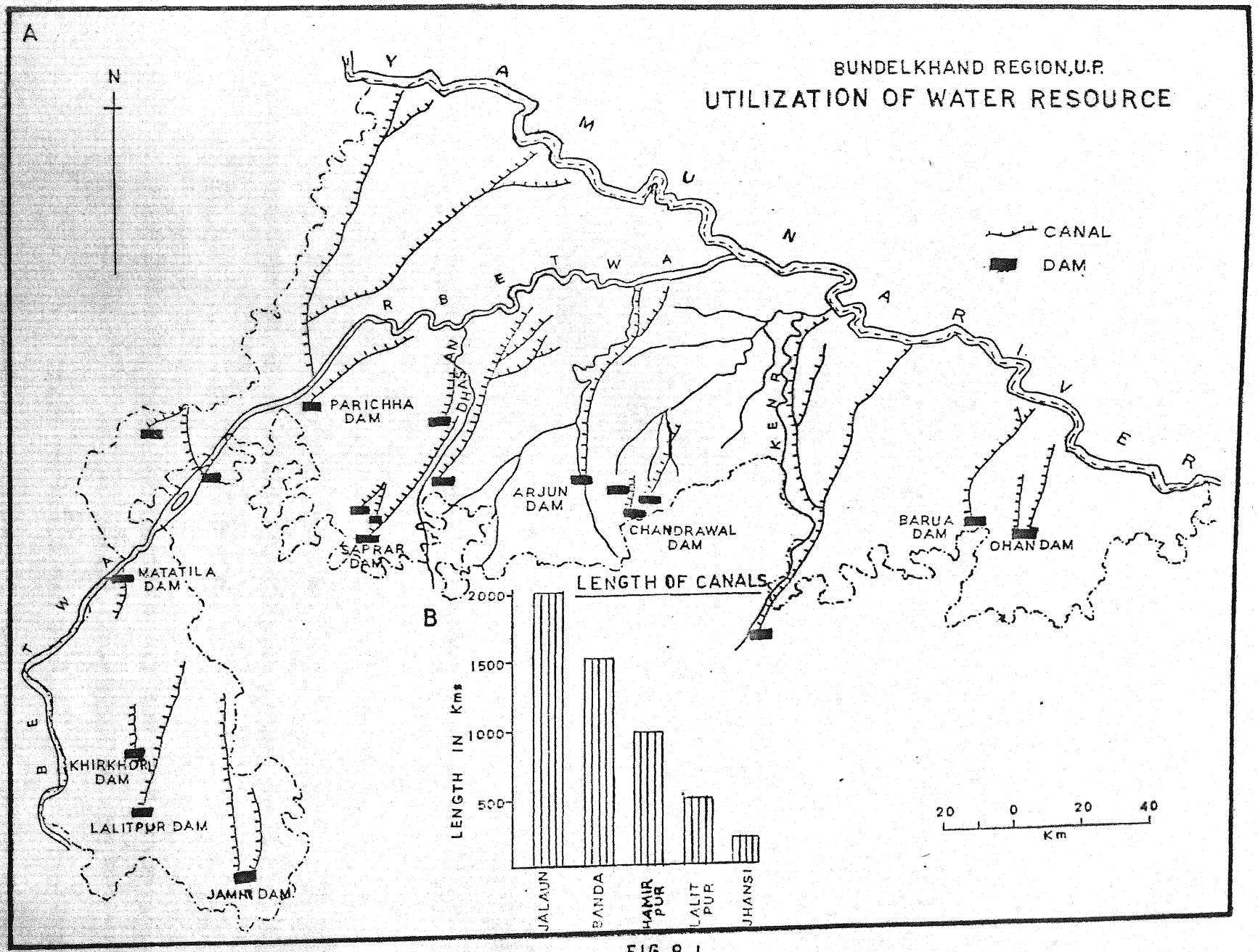
A
BUNDELKHAND REGION, U.P.
UTILIZATION OF WATER RESOURCE
N
YAMUNA
BETWA
RIVER
KEN
CANAL
DAM
PARICHHA DAM
JHANJHAN DHAS
ARJUN DAM
CHANDRAWAL DAM
BARUA DAM
OHAN DAM
SAPRAR DAM
MATATILA DAM
KHIRKHORI DAM
LALITPUR DAM
JAMNI DAM
B
LENGTH OF CANALS
LENGTH IN Kms
2000
1500
1000
500
JALAUN
BANDA
HAMIR PUR
LALIT PUR
JHANSI
20 0 20 40
Km

FIG. B.1

system. The total cultivable area under command of this project is 99548 acres. Its total cost has been estimated about 12 crores of rupees. The installed hydel capacity of the project is 30 M.V.

Dhukwan Dam :

It is situated in Jhansi tahsil at a distance of 9.6 Kms south-west of Babina railway station across the river Betwa. It was constructed during the British period in the years 1905-1909 at the cost of Rs.23.98 Lakh. The dam is 17.61 metres high and 1827.69 metres in length and its canals serve an area of 21415.76 $Km^2$.

Parichha Dam :

It isthe oldest dam of the study area constructed across Betwa river and situated on Jhansi-Kanpur road at a distance of 25.6 kms in the east of Jhansi. It was constructed during the period 1881-1886. It commands the catchment area of 50379 $Km^2$ with a gross capacity of 3245 million cubic feet of water. The length of dam is 8.529 metres with the height of 17 metres.

Matatila, Dhukwan and Parichha all the three dams are in one form link of reservoirs. Parichha is the irrigational dam while Matatila and Dhukwan are the feeding reservoirs. Parichha is situated down stream of these three dams, therefore, network of canals are taken out from this dam.

Pahari Dam :

It lies across the river Dhasan in Mahrauni tahsil at a distance of 16 kms from Mauranipur-Nowgaon road. It was constructed during 1901-12 and has a catchment area of 7865 $kms^2$. The length of the dam is 9274 metres with the height of 17 metres. It was constructed at the cost of Rs.8.64 Lakh.

Lahchura Dam :

It is situated across river Dhasan in Mauranipur tahsil at a distance of 11.2 kms from Harpalpur railway station and was constructed during 1906-10. The catchment area is 84.21 $kms^2$ and the height of dam is 18 metres. It was constructed at the cost of Rs.7.02 Lakh.

Lahchura is an irrigational dam while Pahari dam is feeding reservoir because Dhasan canal system is taken out from Lahchura which has a coverage of 431900 acres of irrigated land.

Rajghat-Dhurwara Projects :

They are multipurpose projects being constfucted at a distance of 48 kms and 19 kms respectively on upstream side of Matatila across the river Betwa. Construction of these dams will provide production against floods. Irrigation potential of two canals, to be taken off from Rajghat reservoir, will be roughly 150,000 acres.

They will be multipurpose projects with 8 centres of total 25 megawatt power generating capacity. The capital investment of the project is estimated to be Rs.55.79 Lakh.

Minor Projects :

Govindsagar Dam :

It has been constructed on the Shahzad river at a distance of 4.8 kms from Lalitpur town and irrigates an area of 24000 hectares in Lalitpur and Jhansi districts. Its storage capacity is 3420 million cubic feet. The length of its right canal system is 187.21 kms and that of its left canal system is 16 kms. It was constructed at a cost of Rs.54.10 Lakh.

Kabarai Dam :

This project has been launched in Hamirpur district near Mahoba town. It stores 400 million cubic feet of water for the irrigation of 2000 hectares of land around Mahoba.

Arjun Dam :

It is situated on the Arjun river, a tributary of the Betwa, about 2.4 kms south-west of Charkhari town in Hamirpur district. Its storage capacity is 2250 million cubic feet of water. It provides water to the area of 10800 hectares in the district.

Saparar Dam :

It is constructed at 11.2 kms south of Mauranipur town across river Saparar, a tributary of Betwa. Its storage capacity is 2800 million cubic feet of water. It irrigates an area of 16000 hectares in Jhansi and Hamirpur districts. The total length of its canal system is 114.4 kms. Its cost of construction was Rs .96.17 Lakh.

A number of minor irrigation schemes have been proposed for Hamirpur district like Maudaha dam, Segaon dam, Tikari dam, Borima dam, Urmil dam, Chandrawal dam, Sahjan pump canal scheme having irrigational capacity of 9.0, 4.0, 4.0, 4.5, 2.5, 4.0 and 1.40 $kms^2$ respectively and for Banda district Augasi pump canal scheme (111.9$km^2$) Chillimal lift canal scheme (17.5 $Km^2$) and Chilla lift irrigation scheme (13.3 $Km^2$) have been launched.

Important Canal System :

The Betwa Canal System :

The canal was constructed on the left bank of the Betwa river from parichha dam in 1887. The canal runs parallel to the Jhansi-Kanpur road for about 19 kms and near Pulia village it bifurcates in the Hamirpur branch and the Kuthondh branch. Jalaun district avails greater benefit from Betwa canal than Jhansi district because

it passes through the area of Mar and Kabar soils which do not require much irrigation.

For the successful functioning of the Betwa canal, Parichha dam was supplemented by Dhukwan dam for storage of water for use of Betwa canal. The reservoir, no doubt, increased the discharging capacity of canals from 300 to 600 cusec. At present the whole system of Betwa canal irrigates about 5 lakh hectares of land in the region.

The Ken Canal System :

Bariapur was selected for the site of the Ken canal head works. Its capacity is 426 million cubic feet of water. This barrage is capable of discharging 2000 cusecs. Ken canal irrigates 27 lakh hectares of land of Banda District. But the supply of water by this barrage was inadequate, therefore, another huge reservoir has been constructed near Gangu village' in Chhatarpur district. Its capacity is 15000 million cubic feet. Main channel of Ken canals runs paralled to the right bank of river. Further it bifurcates into two main branches - Banda and Atarra canals, most of the trans ken area is irrigated by these canals.

The Dhasan Canal System :

It is the third system of canal irrigation east of Mauranipur. Lahchuraghat on Dhasan river is the site

of dam. The water-shed area between rivers Dhasan and Birma is 2.7 hectares which is under command of Dhasan canal system. It irrigates about 147200 hectares of land in Hamirpur district.

The Pahuj Canal :

This is another canal system in Jhansi district. It comprises a reservoir on the river Pahuj and the channels have been taken out from it. Pahuj dam not only allows adequate storage of water to feed canals but also ensures supply to the Garhmau reservoir. The catchment area of dam is 192 kms, and storage capacity is about 796 million C.ft. The command area by the whole system including Garhmau reservoir is 14777 hectares out of which 5400 hectares is irrigated for the Rabi crops[9].

Besides these, wells, Rahats, Government and personal tube wells, pumping sets and Bandhis are also the sources of irrigation in the region. Length of canals (Fig.8.1B) and number of others sources of irrigation are as follows :-

| | | |
|---|---|---|
| (1) | Length of canals in Kms. | .. 5046 |
| (2) | No. of Government tube-wells | .. 987 |
| (3) | No. of personal tube-wells | .. 3110 |
| (4) | No. of Pumping sets | .. 36239 |
| (5) | No. of wells | .. 85946 |
| (6) | No. of Rahats | .. 32345 |
| (7) | No. of Bandhis | .. 278541 |

Electrification :

People of the region are now aware of the growing importance of electric-power because of its easy availability. Since there is no other sources of power like Petrolium and coal in the region, electricity has much contributed to economic development and cultural change of the region. Matatila multipurpose project with installed capacity of 30 M.W., is a chief source of hydro-electric power in this region. Besides this, U.P. State electric grid, Rihand dam and Panki thermal power stations of Kanpur district are another sources that make to get electricity supply in the region.

Distribution of Hydro-electric Power in the Region :

There are three main transmission lines in the region, i.e. 33 K.V., 66 K.V. and 132 K.V. (Fig. 8.2A). The transmission line of 33 K.V. runs all over the region. The transmission line of 66 K.V. runs from Matatila power station to Jhansi, Mauranipur, Mahoba and Banda and the second line of the same capacity joins the power station Lalitpur. The transmission line of 132 K.V. runs from Dhukwan power generating station to Panki thermal power station, passing through Jhansi, Moth, Ait and Orai. Overall 40 power generating sub-stations are existing in the region. The region has been divided into two power supply divisions i.e.

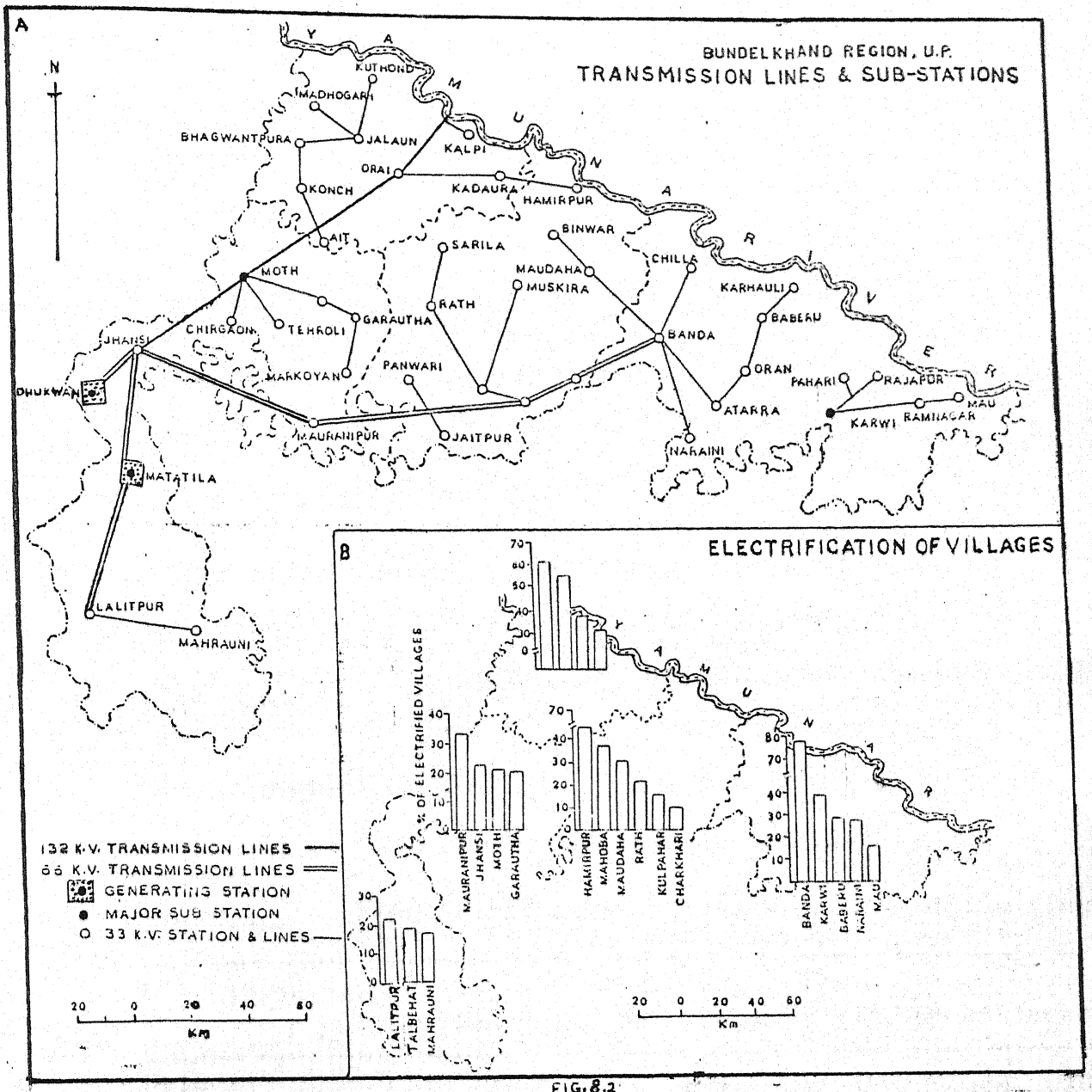
A
BUNDELKHAND REGION, U.P.
TRANSMISSION LINES & SUB-STATIONS
N
YAMUNA
KUTHOND
MADHOGARH
BHAGWANTPURA
JALAUN
KALPI
ORAI
KONCH
KADAURA
HAMIRPUR
AIT
SARILA
BINWAR
CHILLA
MOTH
MAUDAHA
MUSKIRA
KARHAULI
RATH
GARAUTHA
CHIRGAON
TEHROLI
JHANSI
BANDA
BABERU
MARKOYAN
PANWARI
ORAN
PAHARI
RAJAPUR
DHUKWAN
ATARRA
KARWI
RAMNAGAR
MAU
MAURANIPUR
JAITPUR
NARAINI
MATATILA
LALITPUR
MAHRAUNI
132 K.V. TRANSMISSION LINES
66 K.V. TRANSMISSION LINES
GENERATING STATION
MAJOR SUB STATION
33 K.V. STATION & LINES
20 0 20 40 60
Km
B
ELECTRIFICATION OF VILLAGES
% OF ELECTRIFIED VILLAGES
MAURANIPUR
JHANSI
MOTH
GARAUTHA
HAMIRPUR
MAHOBA
MAUDAHA
RATH
KULPAHAR
CHARKHARI
BANDA
KARWI
BABERU
NARAINI
MAU
LALITPUR
TALBEHAT
MAHRAUNI
20 0 20 40 60
Km

FIG. 8.2

Banda division and Jhansi division. Banda division consists of Banda and Hamirpur districts and Jhansi division includes the districts of Lalitpur, Jhansi and Jalaun.

The industrial sector accounts for highest (36.59%) power consumption whereas agriculture domestic, commercial and other sectors share 28.17%, 17.21%, 1.37% and 16.65% of total electric consumption respectively.

Rural electrification is a positive step towards reducing the gap between urban and rural economic development. With the impetus of rural electrification, 32.07 percent villages have been electrified in the region. The percentage of tahsil wise rural electrified villages have been given in table 8.3 and map (Fig 8.2B).

Table 8.3 : Electification of villages in the Region (1983).

| Tahsils/Region | % of electrified villages | Tahsils/Region | % of electrified villages |
|---|---|---|---|
| Moth | 21.68 | Mahoba | 30.84 |
| Garautha | 21.05 | Jalaun | 37.30 |
| Mauranipur | 30.36 | Konch | 30.24 |
| Jhansi | 23.03 | Orai | 55.73 |
| Talbehat | 18.28 | Kalpi | 61.00 |
| Lalitpur | 22.34 | Banda | 71.78 |
| Mahrauni | 16.32 | Baberu | 29.71 |
| Hamirpur | 69.59 | Naraini | 29.65 |
| Rath | 22.28 | Karwi | 39.67 |
| Kulpahar | 16.45 | Mau | 16.76 |
| Charkhari | 11.36 | | |
| Maudaha | 30.12 | Region | 32.07 |

Industrialization :

Industrialization has an important place in the process of economic development and socio-cultural change because it determines the human power and prosperity as well as resource use in different sectors. It includes those economic activities which are directly related with the utilization of available resources on the earth to cater the human needs. All those external and internal forces which have helped the process of change, have also paved the way of urbanisation and industrialization. Industrialization does not mean that there should be use of big and complicated machinery and urbanisation does not mean that majority of persons live together in small areas. Both require specific social relation as well as a broad views and both are opposed to the traditional social system.

The changes which occur in population structure and distribution are also co-relative factors of economic development and socio-cultural change. Factories, services and other profitable economic activities are localised more and more in some specific areas. Rural Population also migrates to that areas, with the result, the population mobilization is increased and existing spatial organisation takes new form which becomes the main factor of socio-cultural change.

Although the regional economy is based on agriculture, the agrobased industries could not develop in the region due to various reasons. It may beremarked that 3.59% persons are engaged in household industry, manufacturing, repairing etc., while the corresponding figures for the state and country are 7.28% and 9.46% respectively.

Historical Development :

The early industrialization of the region is very much obscure due to the lack of authentic accounts. Hence, no clear picutre of its industrial development in the ancient period can be traced out. However, some vague idea can be made from the valuable treasure of vedic literature and certain important works of the later periods.

Duringthe reigns of Mauryas, Guptas, Gonds, Gujar, Pratihars, Chandelas, and Bundelas, various traditional industries were flourishing in the region. In the Mughal period, the artisians were employed to the several types of manufacturing, with the change of superemacy into the hands of the Britishers, authentic records of the developments in the field of manufacturing can be easily found. The Britishers conducted the land measurements and industrial surveys for the development of the economy of different parts of India including the study region.

In the beginning of 18th century, the region was famous for the excellent cloths made by hand. The designs made on certain kinds of cloths were also praiseworthy. Kustas (nomadi artisans) came to this region from the Gwalior State and were patronised here by the Maratha rules. They produced very fine cloths from the yarns of 150 cpunts. During the mid-19th century, in about 1844, Colonial Sleeman noticed that fine woolen carpets were produced in the Jhansi. In 1863, cloth valued Rs.6,80,000[10] was exported from the region to distant places of the country. Copper, iron-ore and sandstone were mined and used in the making of weapons, implements, utensils, buildings etc. In about 1874, iron was extracted from soft haematite ores which were melted in fifty-three furnaces inthe region. Pig iron was exported from this region to Saugor (M.P.). Copper was available only in small quantity. The stone quarries of the region supplied the dressed stones for the Chandela masonary works.

In about 1909, brass-wares were manufactured at Mau in Jhansi district and artistic articles (with incised patterns) were made of brass and bell metal in Mandaura. Axe-hands and coarse blankets were made in Talbehat in Lalitpur district. Curtains and Sanddles of Pig skin were also manufactured at a certain places. In those days, the manufacture and dyeing of cloths were very famous in Jalaun district. The main centres of cloths

dyeing in this district were Kotra and Saiyadnagar (Tahsil Orai near Betwa river). Coarse cotton cloth (Gazi) and floor cloth for local use were made and printed in Banda town. Jalaun district had four cotton ginning factories, two of which were located at Kalpi and worked there for a considerable period of time. In 1901 a large cotton ginning mill was established by Messrs Baijnath Juggilal of Kanpur at Ait in tahsil Orai. Its plant cost was Rs.1,25,000[11]. In the busy season, its output averaged about 187 quintals daily. Another town where a similar factory was set-up, was Konch. The cotton trade, inspite of many difficulties, had become a stable industry of the district. In 1901, coarsed cloth was made for local use byKoris throughout the district.

In Hamirpur district coarse cloth was made by some Muslim weavers mainly of Mahoba. At Gauhari, a village few miles north of Kulpahar, several hundred persons were employed in moulding bowls and other vessels out of soft soap-stone found in the hills closed by. Idol carving and the manufactures of small brass animals were carried on by a few families of goldsmiths at Srinagar, a village located south of Mahoba[12]. There was a big cotton ginning mill in this district at Kulpahar which was owned by a Parsi firm, and another small one was located at Mahoba. Kuchhachha village of Pargana Rath was a noted cloth dyeing

centre. There was a school of art at Charkhari where models of wood and brass work were designed and weaving was also taught.

In Banda town in around 1901, cooking utensils of copper and bell metal (called locally as 'Phul')[13] and various articles of gold and silver for household or ornamental purposes were manufactured. At several places in Banda district, coarse blankets, cotton cloth and 'Tat' as well as rope and twine of inferior quality were also made. In some villages of the district adjoining the hills such as Rauli Kalyanpur, Gonda, stones were chewn and fashioned into mill-stone. In Karwi subdivision, there were a number of stone quarries. In Karwi town there was a small production of silk embroidered and velvet saddle cloth. The best known local industry of the district was the cutting and polishing of stones. In Banda city, there were some fair Lapidaries one of which secured a branze medal at Delhi exhibition. They cut and polished agates, Jaspars, mass stones, water stones, amethysts etc. The value of the finished articles depended more on the labour and skill than on the actual cost of the materials.

From the above facts, it can be said that the region was developed in traditional industrial activities of various types. But during the British regime, the traditional art and craft of manufacturing began to decline with the introduction of railways (1883-89) in the region. Foreign manufactured goods flooded the regional markets and gave a set-back to the traditional crafts. A large numbers of weavers and other artisans were thrown out of the employment and several units had to be closed down. But the second world war led to a securing of goods and a consequent rise in their prices, a condition which favoured the expansion of new industries. After Independence, our national government intended to develop national economy through the development of agriculture and industry. The policy of industrial development was framed and five years plans were made on a planned way for the growth of industrial activities. As a result, new industries were developed and impetus was given to some existed already.

Though the region has abundant agricultural resources, bountiful reserves of mineral resources and enormous forest wealth, the lack of enterprises, technological assistance, under developed means of transport, paucity of skilled labour have led to the region industrially backward. The existing industrial establishments are the only at small and household levels based on local

raw materials and the traditional pattern and the produced goods are for the local use with few exceptions.

Distribution of Industries :

The industries are classified on the basis of raw materials used. There are following types of industries existing in the study region (Fig. 8.3) :

(1) Agro-based industries,
(2) Live-stock based industries,
(3) Forest-based industries,
(4) Mineral-based industries,
(5) Metal-based industries,
(6) Chemical-based industries,
(7) Miscellaneous industries.

1. Agro-based Industries :

Paddy, wheat, gram, pulses, oil-seeds, sugarcane and various other crops provide sufficient raw materials for the agro-based industries. There are 269 units of agro-based industries in the region registered by the State Directorate of Industries of U.P. (Table 8.4) out of them, 193 units are located in urban areas and the remaining in rural areas. Banda district has a highest number of units of agro-based industries in the region. It has 107, out of which 35 are located in Karwi, 34 in

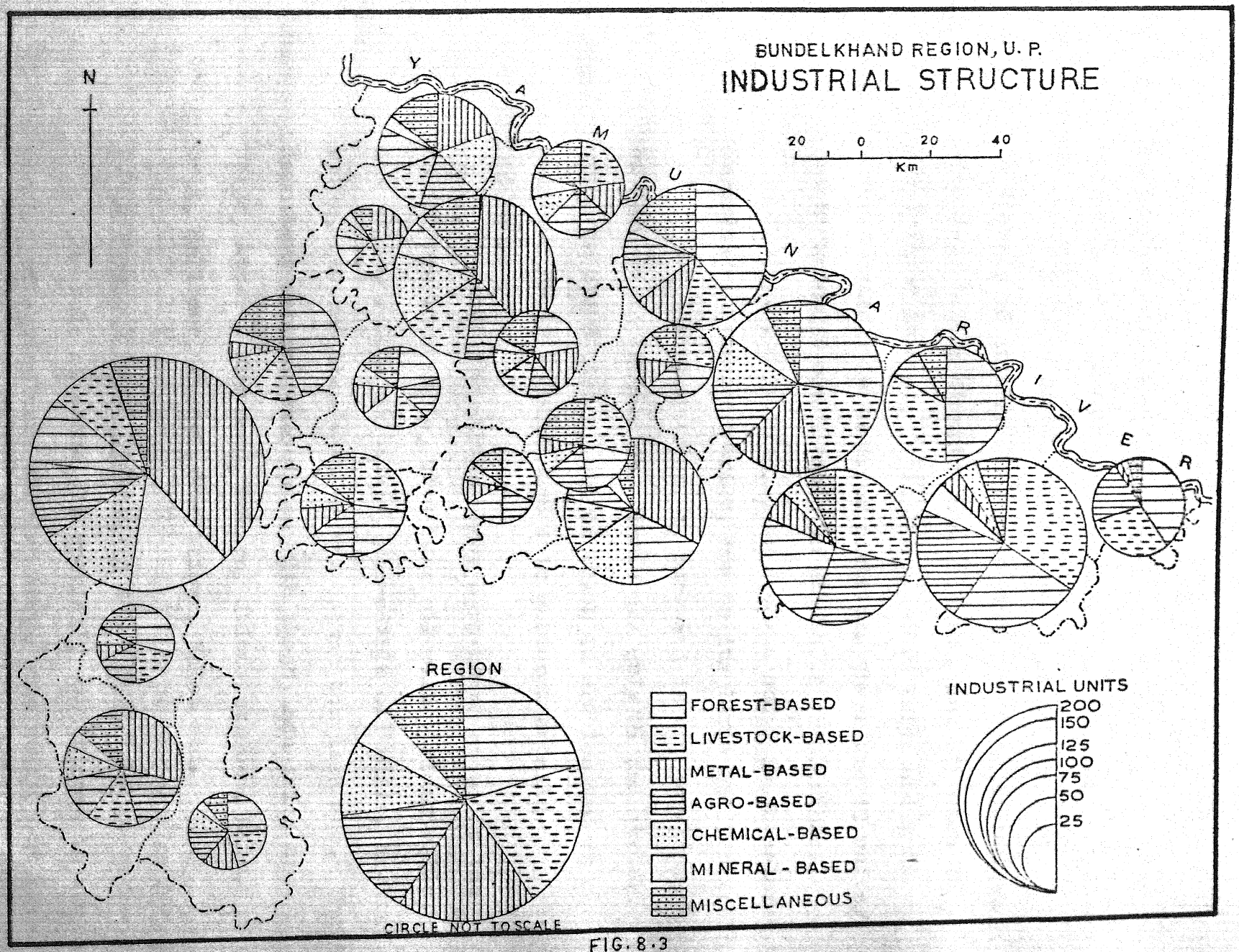
BUNDELKHAND REGION, U. P.
INDUSTRIAL STRUCTURE
N
YAMUNA
NARMADA RIVER
20 0 20 40
Km
REGION
CIRCLE NOT TO SCALE
FOREST-BASED
LIVESTOCK-BASED
METAL-BASED
AGRO-BASED
CHEMICAL-BASED
MINERAL - BASED
MISCELLANEOUS
INDUSTRIAL UNITS
200
150
125
100
75
50
25

FIG. 8.3

Naraini, 21 in Banda, 10 in Mau and 7 in Baberu tahsils. Banda district is followed by Jhansi district with industrial units of 67, out of which 31 are located in Jhansi, 16 in Garautha, 12 in Moth and 8 in Mauranipur tahsils. Jalaun district has 43 units, out of whicb 20 are located in Orai, 12 in Jalaun, 6 in Kalpi and 5 in Konch tahsils. In Hamirpur district, there are 42 units, out of which 10 are located in Mahoba, 9 in Charkhari, 7 in Hamirpur, 6 in Rath, 5 in Maudaha and 5 in Kulpahar tahsils. Lalitpur district, due to its large hilly terrain and rugged forested areas, is backward in the development of agro-based industries. There are only 21 industrial units in the district, out of which 12 are located in Lalitpur, 5 in Talbehat and 4 in Mahrauni tahsils.

The main industries under agro-based group in the region are rice mills, rice bran oil mills, flour mills, dal mills, edible oil mills, non-edible oil mills, brakery works, gur and khandsari works, cotton textiles etc. The important centres associated with these industries are Banda, Atarra, Khurhand, Baberu, Chitrakut dham, Rath, Orai, Lalitpur, Jhansi, Mauranipur, Kalpi etc.

2. Live-stock Based Industries :

The role of animal is specially significant in the context of agriculture and industry. The sufficient live-

stock resources are available in the study region which provide hides and skins, milk, bones, wool and eggs for industrial development. In study region, there are 358 industrial units based on live-stock resources. 213 units are in the urban areas and 145 in rural areas. These industries are leather tanning, footwear, woolen and other allied activites.

In Jhansi district 55 units are existing. There are 26 units in Jhansi, 14 in Mauranipur, 10 in Moth and 5 in Garautha tahsils. 167 units are working in Banda district, out of which 54 are in Karwi, 37 in Naraini, 35 in Banda, 25 in Baberu and 16 in Mau tahsils. In Hamirpur district 69 units are functioning, out of which 16 are in Hamirpur, 15 in Charkhari, 14 in Mahoba, 9 each in Maudaha and Kulpahar and 6 in Rath tahsils. 45 units are in Jalaun district out of which there are 20 in Orai, 11 in Kalpi, 9 in Jalaun and 5 in Konch tahsils. In Lalitpur district, only 22 units are working out of which there are 10 in Lalitpur and 6 in each Talbehat and Mahrauni tahsils. The important centres are Kalpi, Sumerpur, Mahoba, Kabarai, Atarra, Karwi, Mauranipur, Lalitpur and Jhansi.

3. Forest-Based Industries :

Forest resources are found in adequate quantity in the region. The total number of industirl units based on

Table 8.4 : Industrial Units in the Region (1983).

| Tahsils/ Region | Agro-based | Live-stock based | Forest-based | Mine-ral based | Metal -based | Chemi cal-based | Misce-llaneous indus-tries |
|---|---|---|---|---|---|---|---|
| Moth | 12 | 10 | 14 | 2 | 3 | 7 | 12 |
| Garautha | 6 | 5 | 8 | 5 | 5 | 3 | 6 |
| Mauranipur | 8 | 14 | 12 | 2 | 5 | 4 | 8 |
| Jhansi | 31 | 26 | 28 | 41 | 113 | 40 | 15 |
| Talbehat | 5 | 6 | 8 | - | 2 | 2 | 5 |
| Lalitpur | 12 | 10 | 9 | 3 | 21 | 7 | 10 |
| Mahrauni | 4 | 6 | 7 | 1 | 4 | 3 | 3 |
| Hamirpur | 7 | 16 | 43 | 3 | 12 | 11 | 18 |
| Rath | 6 | 6 | 10 | 1 | 8 | 5 | 10 |
| Kulpahar | 5 | 9 | 5 | - | 3 | 2 | 4 |
| Charkhari | 9 | 15 | 11 | - | 3 | 4 | 13 |
| Maudaha | 5 | 9 | 6 | - | 5 | 4 | 4 |
| Mahoba | 10 | 14 | 20 | 6 | 37 | 18 | 8 |
| Jalaun | 11 | 9 | 9 | 2 | 13 | 12 | 10 |
| Konch | 5 | 5 | 4 | 1 | 6 | 2 | 3 |
| Orai | 20 | 20 | 10 | 2 | 54 | 20 | 18 |
| KAlpi | 6 | 11 | 6 | 4 | 7 | 5 | 10 |
| Banda | 21 | 35 | 46 | 14 | 25 | 16 | 12 |
| Baberu | 7 | 25 | 33 | 2 | 8 | 5 | 9 |
| Naraini | 34 | 37 | 33 | 2 | 8 | 5 | 9 |
| Karwi | 35 | 54 | 40 | 9 | 6 | 6 | 9 |
| Mau | 10 | 16 | 20 | - | 1 | 1 | 3 |
| Region | 269 | 358 | 386 | 98 | 341 | 177 | 196 |

forest products as their raw materials, is 386 in the region, out of which 227 are located in urban areas and the rest in rural areas. Banda district has the greatest number of forest-based industrial units. It has 176 units in all. Out of which there are 46 in Banda, 40 in Karwi, 37 in Baberu, 33 in Naraini and 20 in Mau tahsils. Hamirpur follows Banda district with a total number of 95 units of forest-based industries, out of which 43 are in Hamirpur, 20 in Mahoba, 11 in Charkhari, 10 in Rath, 6 in Maudaha and 5 in Kulpahar tahsils. Jhansi district has the third place as it has only 62 forest-based industrial units. Jhansi, Moth, Mauranipur and Garautha tahsils of this district have 28, 14, 12 and 8 units respectively. In Jalaun district there are 29 units, out of which 10 are in Orai, 9 in Jalaun, 6 in Kalpi, and 4 in Konch tahsils. Lalitpur district has the minimum number of forest-based industrial units. It has 24 units in all, out of which 9 are in Lalitpur, 8 in Talbehat and 7 in Mahrauni tahsils. Manufacturing of wooden toys, card-board, Kattha, wooden furniture, saw mills, carpentary, house-hold articles and biri-making are important in this group. The main centres of these industries are Mahoba, Charkhari, Kulpahar, Mauranipur, Jhansi, Lalitpur, Mahrauni, Manikpur, Chitrakutdham, Moth and Banda. Chitrakutdham is popularly known for the manufacture of wooden toys.

4. Mineral-Based Industries :

The region stands second in mineral deposits after Himalayan region in Uttar Pradesh. But the mineral-based industries are in a small number. Minerals are exported to other industrial centres such as Naini, Firozabad, Aligarh, and Mirzapur. In the study area, there are only 98 registered units, 82 are in urban and 16 in rural areas. Stone crushing or grit industry, stone cutting and polishing, cement Jali and pipe making industry, clay-pot, lime and surkhi, building stone and other stone works come under this group. These industries are mainly concentrated in Jhansi and Banda districts. There are 50 units in Jhansi district, out of which 41 units are in Jhansi, 5 in Garautha, 2 in Moth and 2 in Mauranipur tahsils. In Banda district, there are 25 units, 15 in urban and 10 in rural areas. There are 14 units in Banda, 9 in Karwi and 2 in Naraini tahsils. There are 10 units in Hamirpur district, 9 in Jalaun district and 4 in Lalitpur district. The main centres of these industries are Karwi, Manikpur, Lalitpur, Naraini, Bhaunri, Jhansi, Bharatkup, Mahoba, Kabrai, Orai, Baruwa Sagar and Sheorampur.

5. Metal-Based Industries :

Metal is the back-bone of modern machine civilization. It is the universal substance which is used freely in manufacturing of various machines, agricultural implements,

sewing machines, steel furnitures, aluminium works, radio repairing and electrical goods manufacturing, engineering, manufacturing of steel boxes and attachies, automobile repairings, cycle manufacturing and repairing works, diesel engine repairing works, brass wares, iron-sheet manufacturing etc. come under this group. In the study region there are 341 industrial units. In Jhansi district, there are 126 units; 113 in Jhansi, 5 in Garautha, 5 in Mauranipur and 3 in Moth tahsils. District Jalaun contains 80 units; 54 in Orai, 13 in Jalaun, 7 in Kalpi and 6 in Konch tahsils. 68 units are in Hamirpur district out of which 37 are in Mahoba, 12 in Hamirpur, 8 in Rath, 5 in Maudaha, 3 in Charkhari and 3 in Kulpahar tahsils. There are 40 units in Banda district, out of which 25 are in Banda, 8 in Naraini 6 in Karwi and one in Mau tahsils.

The most remarkable feature is that there is complete absence of large scale units under this industry group. However, in the public sector, there are two large scale units of central railway at Jhansi: they are central mechanical railway transportation carriage and wagon workshop repairing department employing about 3000 and 200 persons respectively.

6. Chemical-Based Industries :

Chemical-based industries are gaining importance in this age due to increasing demand of chemical made articles.

The development of chemical industries is a sort of second industrial revolution in the industrial world after iron and steel. Many industries like Aurvedic Medicines, Laundry soap manufacturing, Plastic industry, optical manufacturing, cloth printing, candle manufacturing, Indigo and colour industry, hair oil and cosmatics etc. are included under this group. There are 177 registered industrial units in the region. Jhansi district records 54 units, out of which 40 are in Jhansi, 7 in Moth, 4 in Mauranipur and 3 in Garautha tahsils. 44 Units are in Hamirpur district out of which 18 are in Mahoba, 11 in Hamirpur, 5 in Rath, 4 in Charkhari, 4 in Maudaha and 2 in Kulpahar tahsils. The Jalaun district has third place in this industry which has 39 units - 20 in Orai, 12 in Jalaun, 5 in Kalpi and 2 in Konch tahsils. In Banda district there are 28 units out of which 16 are in Banda, 6 in Karwi, 5 in Naraini and one in Mau tahsils. The district Lalitpur has only 12 units out of which 7 are in Lalitpur, 3 in Mahrauni and 2 in Talbehat tahsils. The main centres are Jhansi, Lalitpur, Hamirpur, Banda, Mahoba, Atarra, Karwi, Manikpur, Orai etc.

7. Miscellaneous Industries:

In this group, Ice Cream and Ice industry, Atisbaji industry, Dastkari, ready-made cloths, cycle seat manufacturing, printing press and book binding etc. have

been considered. There are 196 units, out of which 165 are in urban and 31 in rural areas. In Jhansi district, there are 41 units, 47 in Hamirpur, 41 in Jalaun, 39 in Banda and 18 in Lalitpur districts. Tahsilwise distribution has been shown in table (8.4). Banda, Jhansi, Orai, Atarra, Mahoba are the main centres of these industries.

It is clear from foregoing discussion that the region has better prospects for industrial development owing to the availability of natural and agricultural resources. The proper exploitation of these resources is required to achieve the high level of industrialisation which, in turn, will accelerate the pace of urbanisation as well as cultural change in the region.

Transport and Communication :

The availability of transport facilities plays important role in the socio-economic and cultural development of a region. The system of transport network functions in the same way as the circulation system of blood in human body. That is why, the adjustment of transport system has great importance in balanced economic development of a region[14]. Indeed, the cultural development is stimulated by transportation. People of different social status as well as regions, gain opportunity to come in contact with each other by travelling in trains and buses. Inspite of all other oppositions, persons believing on conventional

social values and traditions, are also much influenced by the people of different cultural environmemt. Due to innovation of Radio-transistors sets, the people of remote villages are introduced with new political, economic and technological developments around the world. Although with the development of communication, transport has not been compulsory for the exchange of views yet today also, effective means of communication depend on transportation[15]. Therefore, in the context of the interpretation of socio-economic and cultural development as well as in the determination of future development of the region, the study of transport and communication is necessary.

Evolution of Transport :

The history of transport in the study region is as old as the emergence of man in the area. First of all, man himself acted as the means of transport in his hunting stage. He used animals for this purpose in pastoral stage and invented, later on, the modern means of transportation. The transport history of the region can be divided in the following periods :-

(i) Ancient Period :

The vedic literature does not refer to any regional route of importance. The Ramayan of Valmiki mentions

one route of regional importance - Ayodhya to Valmiki hermitage situated at Lalapur hill[17] of Karwi tahsil in Banda district.

The Mauryan, the Gupta, and the Chandel dynasties helped the growth of monastery towns and highways. The Mauryas took keen interest in the maintenance and construction of roads. The two small inscriptions of Gupta character found in Kalinjar prove to the development of roads in Bundelkhand. The Chinese traveller Huen Tsang mentions this tract of country as Chichito with the capital of Khajuraho now in Chhatarpur[18] and informs that there were roads from Chichito to Khajuraho. The roads were meant especially for military purposes. Besides land, water transport was also remarkable. The significant navigable channels were the Yamuna, Ken, Betwa, Sindh and Pahuj. After the downfall of Guptas, due to Huna invasions in the 5th and 6th centuries, very small principalities developed in central India with the enthrownment of Harsh Bardhan in 606 A.D. The transport of the region was renewed. After his death, several chieftains rose to power in different areas of the region. They gave protection to handicraft and commerce, so that they flourished well and small towns and trade centres came into existence. Magasthenese, the Greek traveller, describes that camels, horses, asses were used by the

common folk and wealthy men used elephants. The conveyance which ranked most in honour was chariot. The camel ranked third[19].

(ii) Medieval Period :

This was the period of political ups and downs. With the beginning of 13 century, the kings of Delhi Sultanate turned their arms to the south. Rechard states - " The routes followed by Mughals, Marathas and Britishers are first through the Ganga valley, second from Agra to Delhi and Allahabad towards Gujrat across Malwa and third diagonally across the peninsula towards Madras[20]. Their armies traversed to Deccan passing through Jhansi district. The pass from Jhansi was the easiest to cross the Vindhyan ranges. Madanpura located at the south of Lalitpur district was the site of the pass. Narhat pass, twelve miles west from the aforesaid pass, was another significant pass. Ibn Batuta (1342)[21], describing his journey from Delhi to Daultabad passing possibly through one of these passes, mentioned that the road sides were shadowed with green trees and travellers' inns existed at intervals.

In the later half of the 13th century, the transport in the region was revived and the roads were developed to suppress the rebellions of Gwalior and Dholpur. Shershah (1540-45), in his very short regime, constructed roads in

his military compaign. Akbar (1555-1605 A.D.) divided his vast empire into different administrative units which were interlinked with roads, but the roads were unmetalled and unbridged. Traffic was practically at stand still during the hot weather when fodder and water were difficult to get, that is why, we find an English merchant at Surat complaining that there were hot and four wet months during which time there is no travelling and therefore unfit for commerce.[22] The comparative peace and economic prosperity of Akbar's reign existed upto the 17th century when several towns were founded and several became industrial and marketing places.

With the decline of Mughal empire, several principalities of Bundelas and Marathas appeared in the region. In 1737, the western part of Bundelkhand passed into the hands of Marathas. After 1772, Jhansi which existed since the days of Jahangir, developed into a large town under Marathas[23]. In the 17th and 18th centuries, the main land routes were defined. But the roads were not smoothy running. Mr. Erskine, the first Collector of Bundelkhand (1806-1807) wrote "The roads throughout Banda district are generally in so bad condition as almost entirely to exclude the use of wheeled carriage[24]." Even the natural water high-way of the Yamuna was little used. Kalpi, the chief market on the Yamuna, had fallen

into decay, and its merchants prefered to send their goods down country by Cawnpore instead of by the way of Yamuna, being deterred from the use of insecurity from plunder[25].

Modern Period :

With the dominance of the British empire, the economic and commercial life of the State as well as of the region got momentum. By 1803, the East India Company captured the entire State andthe development of transport started but the emphasis was laid on large river like Yamuna and Kalpi was chosen as market place. In 1854-55 P.W.D. was organised in all the provinces to look after the roads and thus some important roads were constructed. In 1854, a metalled road was constructed through Jhansi, Moth and Kalpi linking Kanpur railway station with this region. Other important roads transversed from Jhansi to Nowgaon, Nowgaon to Banda via Mahoba, Jhansi to Saugor, Kanpur to Banda, Jhansi to Gwalior and Jhansi to Shivpuri. Later on they were linked with the small service centres of the region. To supress the mutiny of 1857, the road development became a burning question before the East India company. So, the company took keen interest in the construction of metalled roads and railways. After the suggestion of the Indian Road Development Committee (1927), Transport Advisory Committee (1934) and Nagpur (1943), road development programmes were launched strictly.

The history of railway in the study area goes back to the year 1885 when the Indian Midland Railway Company was formed, which constructed the Jhansi-Manikpur section of Railways. The Great Indian Peninsula Railway linked Itarsi, Kanpur and Agra with Jhansi between 1885 and 1887.

After Independence, an integrated programme of road development began since 1951 with the commencement of the first five year plan[26]. Under five year plans, several roads were constructed and under the crash programme, several link and feeder roads were completed. But even then, there is a need for road development so that the villages may be linked with main roads for promotion of regional trade and commerce.

Existing Pattern of Transport :

It has been considered under the following two heads :-

(i) Roads,

(ii) Railways.

(i) Roads :

The road network of the region consists of various categories of roads such as national highways, State highways and local roads. There are only two national highways Nos. 25 and 26 and four State highways Nos. 13, 17, 21, and 44 and various other local roads which pass

through the region and link it with Madhya Pradesh. The significant characteristic of the road system is that most of the inter-regional roads run parallel to the railway lines (Fig. 8.4). The details of the metalled roads have been given in table (8.5). An over all picture of accessibility reveals that most of the area of study region is not easily accessible to the roads. It is remarkable to note that 17.87% villages of study region lie on the roads, 22.41% fall within 3 Km. from the roads and 59.72% fall at the distance more than 3 Kms from the roads. The road length in term of area and population is insufficient. The length of metalled roads per 1000 $Km^2$ is 139.19 Kms in the region. The road length in terms of area is 208.97 Km in Orai tahsil followed by Maurnaipur (190.82 km), Banda (182.54), Jhansi (178.15), Jalaun (167.35), Konch (162.98), Hamirpur (159.46), Kalpi (151.47) and Moth (151.06). In the remaining tahsils it ranges from 117.22 kms to 143.62 kms. The road length per lakh population is more in the region (76.55 km) than that of the State (40.30 km). This is mainly due to the fact that region is sparsely populated in comparision to other areas of the State. The region occupies 10% of the total State area whereas only 4.97 percent of State population inhabits it.

Roads influence economic, political, social and cultural interaction. To achieve the proper area

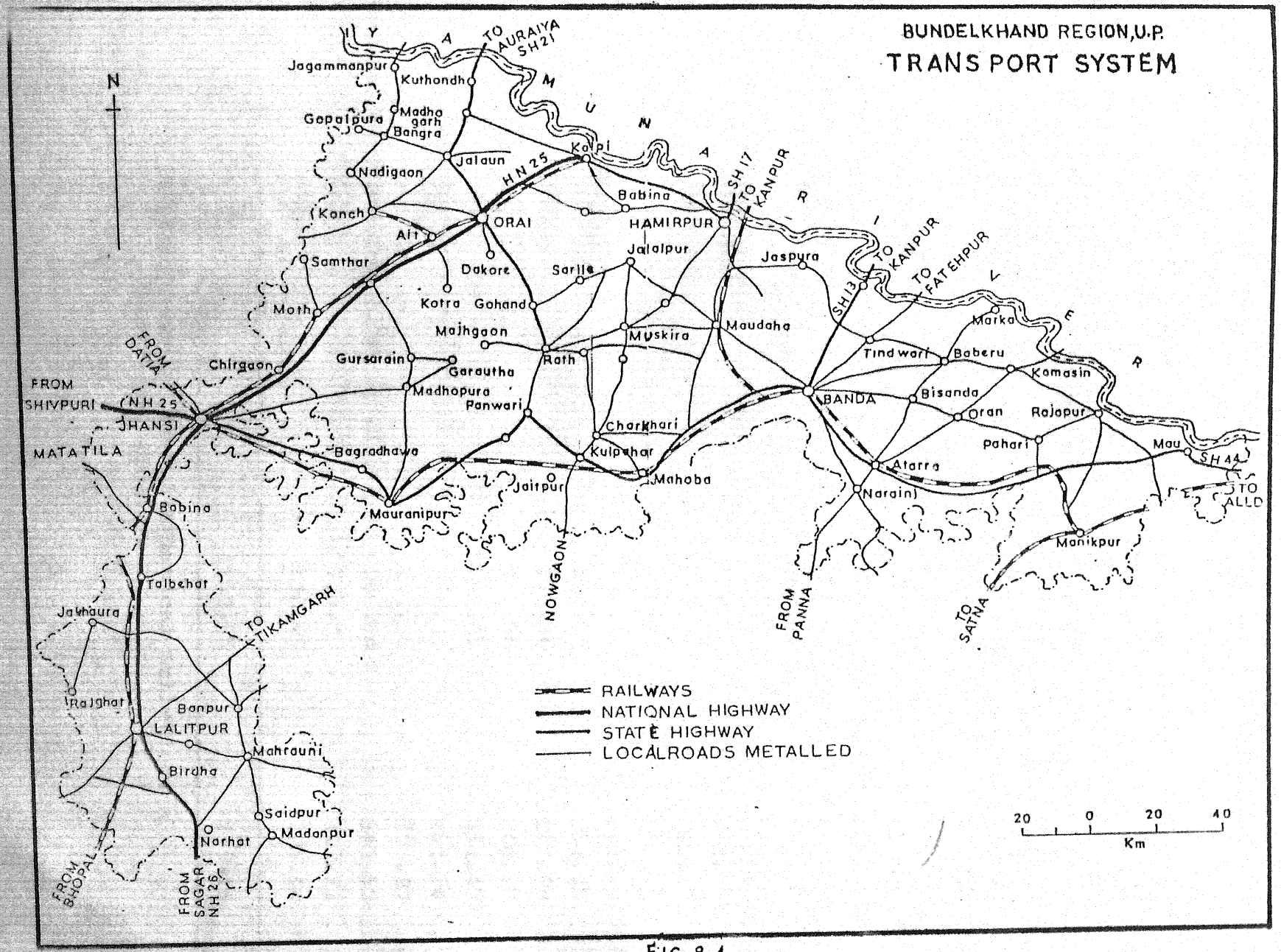
BUNDELKHAND REGION, U.P.
TRANS PORT SYSTEM
N
YAMUNA
TO AURAIYA SH21
Jagammanpur
Kuthondh
Gopalpura
Madhagarh
Bangra
Kalpi
Jalaun
Nadigaon
HN 25
Babina
SH 17
TO KANPUR
RAIL
Konch
ORAI
HAMIRPUR
Ait
Jalalpur
Samthar
Dakore
Sarila
Jaspura
TO KANPUR
TO FATEHPUR
SH13
RAIL
Moth
Kotra
Gohand
Majhgaon
Muskira
Maudaha
Marka
FROM DATIA
Chirgaon
Gursarain
Gerautha
Rath
Tindwari
Baberu
Kamasin
FROM SHIVPURI
(NH 25)
JHANSI
Madhopura
Panwari
BANDA
Bisanda
Oran
Rajapur
MATATILA
Bagradhawa
Charkhari
Pahari
Mau
SH 44
Kulpahar
Atarra
Jaitpur
Mahoba
Narainj
TO ALLD
Mauranipur
Babina
Manikpur
NOWGAON
FROM PANNA
TO SATNA
Talbehat
Jakhaura
TO TIKAMGARH
Rajghat
Banpur
LALITPUR
Mahrauni
Birdha
Saidpur
Madanpur
Narhat
FROM BHOPAL
FROM SAGAR NH 26
RAILWAYS
NATIONAL HIGHWAY
STATE HIGHWAY
LOCALROADS METALLED
20 0 20 40
Km

FIG. 8.4

Table 8.5 : Length of Metalled Roads in the Region(1983).

| Tahsils/Region | Length of metalled roads in Kms. | Length of metalled roads per 100 $Km^2$ |
|---|---|---|
| Moth | 184 | 151.06 |
| Garautha | 220 | 137.53 |
| Mauranipur | 210 | 190.82 |
| Jhansi | 241 | 178.15 |
| Talbehat | 155 | 114.81 |
| Lalitpur | 251 | 124.32 |
| Mahrauni | 154 | 108.83 |
| Hamirpur | 166.8 | 159.46 |
| Rath | 193.0 | 120.55 |
| Kulpahar | 87.70 | 82.89 |
| Charkhari | 77.3 | 85.23 |
| Maudaha | 240.6 | 155.63 |
| Mahoba | 124.2 | 137.39 |
| Jalaun | 224.82 | 167.35 |
| Konch | 172.30 | 162.98 |
| Orai | 197.58 | 208.97 |
| Kalpi | 193.25 | 151.47 |
| Banda | 300.36 | 182.54 |
| Baberu | 191.18 | 120.22 |
| Naraini | 200.54 | 143.62 |
| Karwi | 275.22 | 117.22 |
| Mau | 130.00 | 125.48 |
| Region | 4162.85 | 139.19 |

Source: Compiled from Statistical Bulletines of Districts, 1983.

development, it is essential to link small service centres and towns with big towns by all weather roads. In the region, the facts are otherwise. Many potential service centres are linked with big towns by link roads, most of which are not motorable throughout the year. Local roads are not well paved. Unbridged rivers and nalas make the situation worse. There are many areas especially in Banda, Hamirpur and Lalitpur districts which create a big void on transport map of the region. All these factors have made the region less developed economically.

(ii) Railways :

The length of railway lines is 735 kms in the region. Kanpur-Jhansi-Lalitpur and Allahabad-Jhansi sections are the two important branches of central railways running in this region. The former serves the western part of the region passing through Kalpi, Orai, Jhansi, Talbehat and Lalitpur and the latter serves the southern part passing through Manikpur, Banda, Mahoba and Mauranipur. The other sections of central railway passing through the region are Gwalior-Jhansi, Kanpur-Banda and Allahabad-Satna. Although the area served by these rail lines is small, their linkage relationship is significant as the former links the region with Agra and Delhi and the latter with eastern Uttar Pradesh and Central Madhya Pradesh. The length

of railways per 1000 $Km^2$ is very low in the region (24.52 Kms.). The districtwise distribution of railway lines in the study area has been shown in table (8.6).

Table 8.6 : Length of Railways in the Region (1983).

| District/Region | Length in Kms. |
|---|---|
| Jhansi | 195 |
| Lalitpur | 75 |
| Hamirpur | 222 |
| Jalaun | 155 |
| Banda | 88 |
| Region | 735 |

Accessibility :

Accessibility means the ease of contact with relatively little friction and less wastage of time[27]. Accessibility by transport routes affects the whole gaymut of society. It is usually experienced that the areas withno easy access to transport routes are socially backward. In fact, no place is inacessible but the degree of accessibility may differ from place to place according to the density of roads. The greater the density, the higher is the accessibility.

There are two types of accessibility one is physical

and the other is relative accessibility. Here the former one is dealt with Taking the travelling time and distance factors, the distance of 8 Kms from the transport routes is considered here as accessible distance as a man can easily cover this distance to avail transport facility. Since there are no airways and waterways in the study region, the roads and railways carry much functional importance for the economy of the region. Therefore physical accessibility of roads and railways has been calculated and dealt with separately.

Accessibility by Roads:

To exhibit the accessibility by roads, isodroms of 4 kms, 8 kms and above 8 kms have been drawn along the roads (Fig. 8.5). The areas lying beyond 8 Kms from the roads are regarded as inaccessible and vise-versa. The impact of surface terrain is witnessed on the degree of accessibility. Most of inaccessible areas are found in south-east and south-west parts of the region due to the Vindhyan upland. Accessibility by roads has been calculated as accessible area to the percent of total area on tahsil level (Table 8.7). The table reveals that 86.47% of total area of the region is accessible by roads. On the tahsil level, the largest area accessible by roads is recorded by Charkhari tahsil (98.88%) followed by Kalpi (97.34%), Baberu (97.14%), Konch (96.83%), Naraini (96.83%), Banda (95.55%), Maudaha (94.96%), Jhansi (94.18),

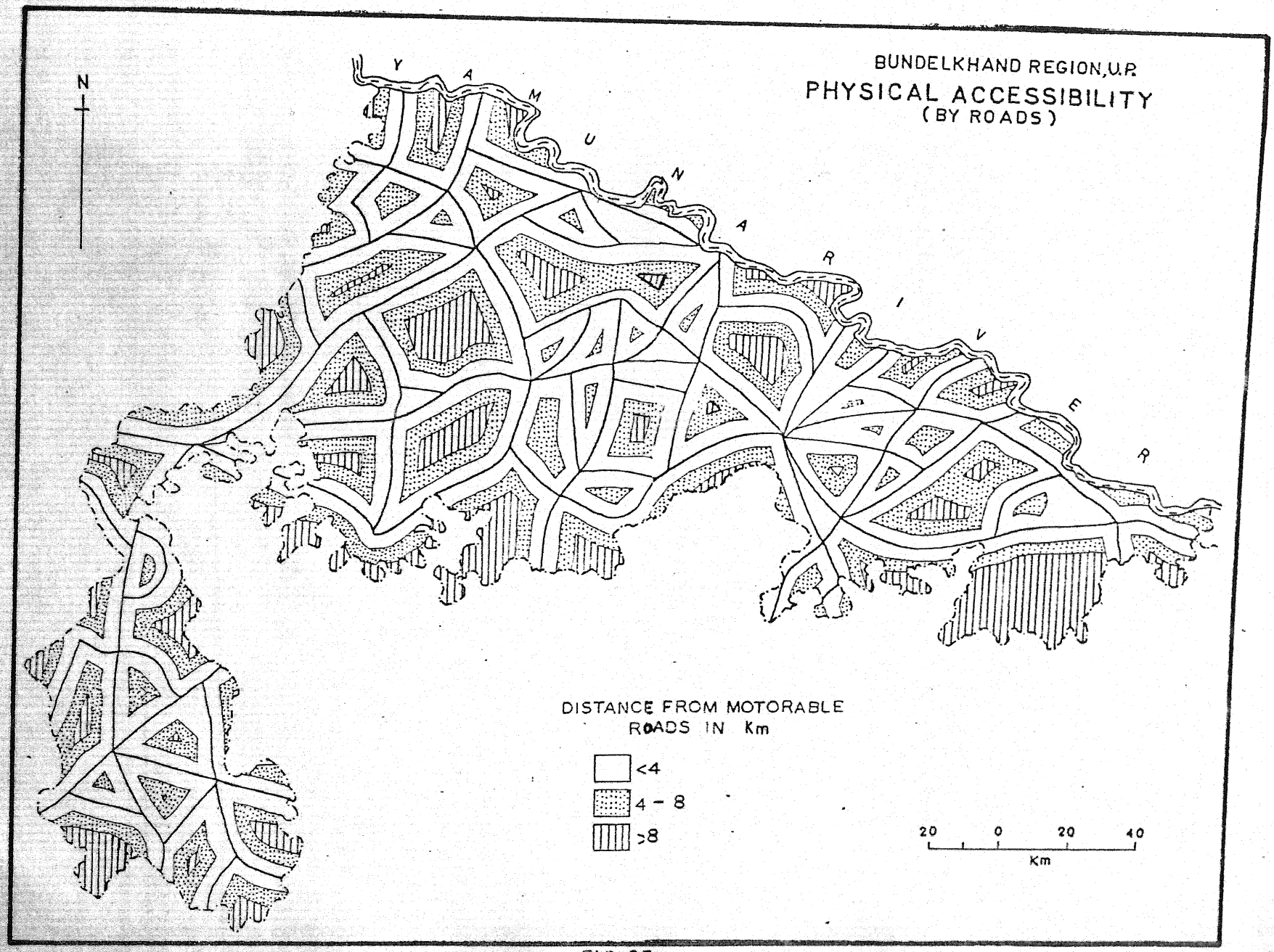
BUNDELKHAND REGION, U.P.
PHYSICAL ACCESSIBILITY
(BY ROADS)
N
YAMUNA RIVER
DISTANCE FROM MOTORABLE ROADS IN Km
<4
4 - 8
>8
20 0 20 40
Km

FIG. 85

Table 8.7 : Degree of Accessibility by Roads in the Region (1983).

| Tahsils/Region | Accessible (Below 8 Kms) | Inaccessible (Above 8 Kms) |
|---|---|---|
| Moth | 88.92 | 11.08 |
| Garautha | 75.45 | 24.55 |
| Mauranipur | 75.08 | 24.92 |
| Jhansi | 94.18 | 5.82 |
| Talbehat | 91.70 | 8.30 |
| Lalitpur | 82.61 | 17.39 |
| Mahrauni | 89.46 | 10.54 |
| Hamirpur | 93.45 | 6.55 |
| Rath | 91.66 | 8.34 |
| Kulpahar | 58.10 | 41.90 |
| Charkhari | 98.88 | 1.12 |
| Maudaha | 94.96 | 5.04 |
| Mahoba | 88.27 | 11.73 |
| Jalaun | 90.61 | 9.39 |
| Konch | 96.83 | 3.17 |
| Orai | 81.85 | 18.15 |
| Kalpi | 97.34 | 2.66 |
| Banda | 95.55 | 4.45 |
| Baberu | 97.14 | 2.86 |
| Naraini | 96.83 | 3.17 |
| Karwi | 55.78 | 44.22 |
| Mau | 58.10 | 41.90 |
| Region | 86.47 | 13.53 |

Hamirpur (93.45%), Talbehat (91.70%), Rath (91.66%) and Mau (91.53%) tahsils. It is so mainly because pentagonal pattern of road network is found in these tahsils. Mauranipur Garautha, Orai, Lalitpur, Mahoba, Moth and Mahrauni are the tahsils where between 70 to 90 percent of the area is accessible. Karwi and Kulpahar tahsils of the region account 55.78 and 58.10 percent respectively. Least accessibility in these areas is due to much hilly terrain.

Accessibility by Rail :

In the study region, the rail net-work is insufficient. There are some tahsils like Mahrauni, Jalaun, Baberu, Garautha, which are far away from the railway tracks. Hence, the analysis of rail net-work has not been made on the tahsil level in the present study. For measuring the degree of rail accessibility, the isodroms of 4 and 8Kms and above 8 kms have been drawn from each station of the region. (Fig. 8.6). It is to be remarked that only 29.23% area of the study region is accessible by railways. The highest accessibility is found in Jhansi district (39.62%) followed by Jalaun (32.30%) Hamirpur (27.68%), Banda (25.83%) and Lalitpur (23.96) districts. For the quick and efficient effectiveness of rail transport, the construction of new railway lines is necessary.

Post and Telegraph :

In 1845, first mail service was started at Jhansi

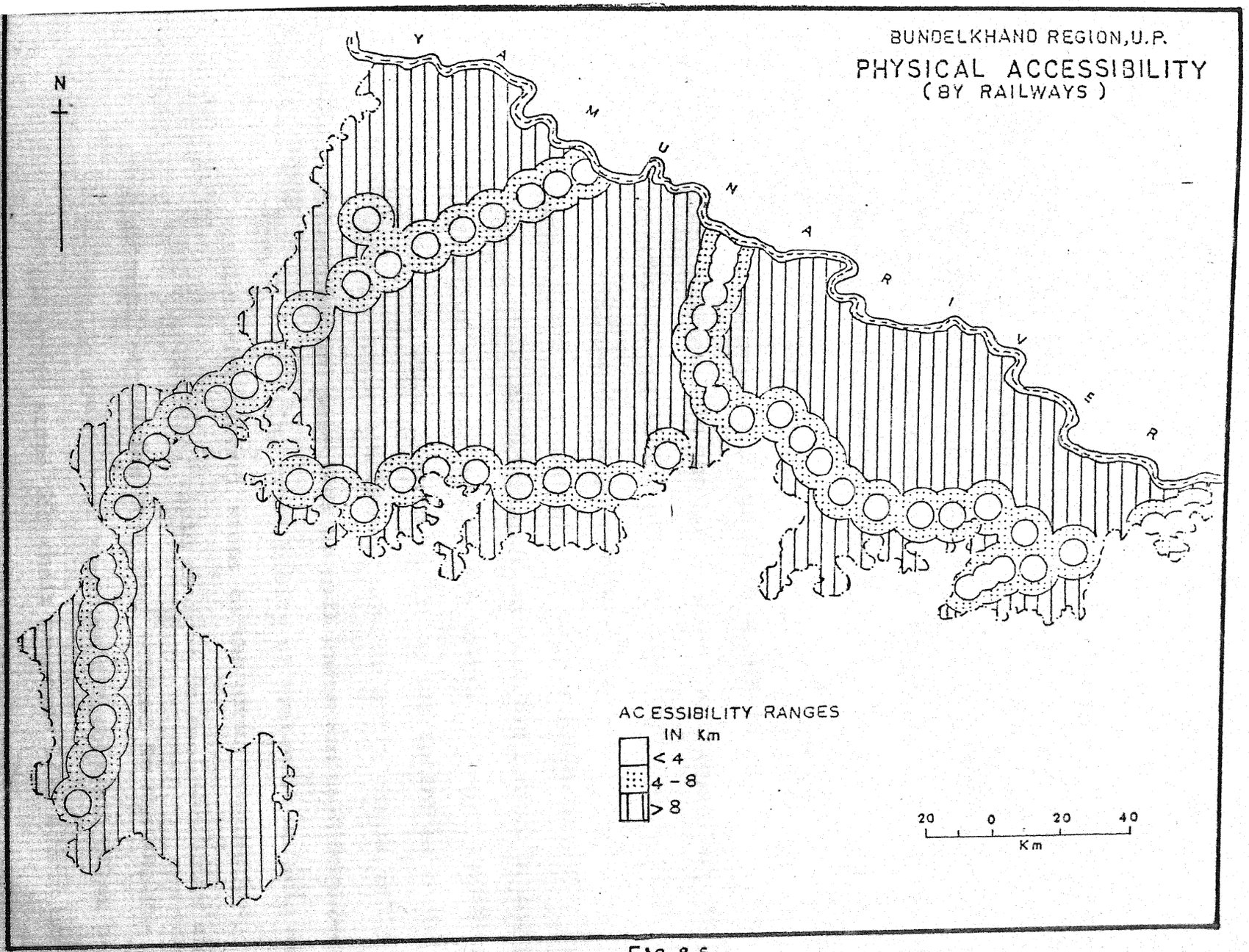
BUNDELKHAND REGION, U.P.
PHYSICAL ACCESSIBILITY
(BY RAILWAYS)
N
YAMUNA RIVER
ACCESSIBILITY RANGES
IN Km
< 4
4 - 8
> 8
20 0 20 40
Km

FIG. 8.6

city which was managed by the local authorities. In 1864, the local management was transferred to the postal department. There was also a mail route between Jhansi and Banda centres[28]. The Britishers established regular postal services between Jhansi and Kanpur. Postman were attached to each office for the delivery of letters which replaced the old system of delivery by Chaukidars and gate-keepers.

In 1907, there were 147 postal branches in the study region, which increased to 979 in 1983 with 1126 Post-offices. In the last decade the telegraphic and telephonic facilities have rapidly increased to meet the requirements of population. The postal services are available in most of the large villages but the telegraphic and telephonic services are mostly concentrated in service centres and towns. A large number of rural and urban centres still lag far behind as regards such communication lines. Now the swift postal delivery services are practised by mail buses and mail trains. Due to increasing availability of transport as well as connectivity of rural areas to the urban centres and town headquarters, rapid changes in socio-economic and cultural activities have been noticed in the region. Increasing movement of numerous students and other people to the urban areas for their purposes like education recreation, services and daily wages etc. indicates the cultural change. Its impact may be clearly noticed in

the surveyed villages. The study in nearest suburban/ urban centres has become easy for the boys and girls of the villages like Khaldaini, Padari, Sultanpura, Chhayan which are situated near the centres, whereas inconveniences of transport have been main factors for the less progress of education in the interior villages like Patori, Bamhaura, Kalwara Khurd, Bachhondha etc.

It is evident from the study of the villages that before twenty years only rich persons had radio, transistor, cycle, watch, but now these haves are common. Nine hundred and twenty transistor-sets have been found in 2426 families of surveyed villages. What to say about T.V. and Vedio, these are still regarded as luxurious requirements in most of the families. On an average, one transistor-set per 2.64 families is found in the study area. Sultanpur, Padari, Ballan, Mirchwara and others are the villages where people have much interest to the news through newspapers, but inspite of communicational and educational development, people are still impelled from the feeling of illiteracy and traditions.

Other Cultural Features :

Field survey reveals that people are being familiar with the new innovations and technological processes. Modern institutions of economic development have brought significant changes in the life of the people. With these changes, people are adopting new habits as well

as new methods. In this context, four changeable elements : education, fashion, habits of easting and drinking and marriage customs have been discussed here :-

Education :

The actual aim of education is to develop the personality, to create the character of the children and to make them dedicated to the nation with honesty. The field study of the villages indicates that at present many facilities have been provided for the education of women, backward, scheduled castes and scheduled tribes. Informal training of hereditary occupation has been traditionally given to the boys in most of families, but now-a-days these types of trainings are given less importance because traditional occupations are losing their significance.

It is known from the study of villages that only 27.22 percent people are literates, whereas before twenty years their percentage was 6.98. It is clear that educational progress was much less at that time. Before Independence, the children of high castes and rich families received education but they could not attain higher education due to lack of educational facilities. Among the literates, 29.88% were Kshatriyas, 25.70% Brahmins, 20.56% Kurmis and 23.86% were other castes. But now the

the boys of all castes are receiving higher education with the facilities of education to the all.

It is also revealed from the field study that the literate scheduled castes persons are only 5.23 percent. Among these, 68.28% are primary, 20.40% Junior and High School, 7.72% Intermediate, 1.94% graduate and 1.66% Post-graduate. Among the literates of scheduled castes, 98.24 percent are males and 1.76% females. It is also found that traditional family occupation is decreasing due to progress of education.

Fashion :

There is a remarkable change in the dresses of rural people due to increasing education and economic standard as well as cultural contact with urban centres. Generally the dress of the male was 'Dhoti', 'Kurta' and 'Safi' (Small turban) and females dress was 'Dhoti' or 'Saree' and 'Jhulla' or 'Blouse' before, but now farmers have also began to put on cloths of modern fashion. The western fashion have replaced the traditional dress. Cotton fabrics is replaced by terricot, terin and polyster cloths. Pant, bushirts, well-bottom etc. are the lovely dresses of educated young men. The ladies are paying keen interest to wear dark coloured and printed sarees and the men are feeling eminence to wear

fine coloured bushirts and shirts. Other items of daily uses like long tape shoes, high heel chappels and shoes have been modish in men and women both. Although the tendency of new fashion is much increasing in educated, rural prosperous and urban people, the people, who are passing through low standard of living in the rural areas, have been adopting their traditional dresses. Some efforts have been made by low castes to rise their low status. The backward and lower castes are doing such efforts by adding 'Surname' of higher castes with their names as well as wearing 'Yagopavit'. In the list of daily needs, many significant items are being included. Uses of silver aluminium, German silver, steel pots are increasing due to less price in poor, rich, rural and urban families. The use of cooking gas in urban areas and Gobargas in rural areas is being popular to make food.

Nature of Eating and Drinking :

The habits of eating and drinking have undergone changes due to increasing social and economic standard of living. Although Ghee, Milk, Butter etc. are not available in much quantity as was in past, the habits of eating and drinking Kachori, Pakori, Tea and Coffee is increasing. It is known from the study of the villages that the prohibiting rules of eating and drinking are existing but they are losing their strictness. Generally

villagers follow them, but urban people do not. For example the members of high, medium and low castes express their impotency in taking food at the 'Thali' of lower castes. Whereas, this is not practised at hotels or restaurants. There is no question about the caste of cooker and waiter there. Even if he knows, there is no objection to him. Brahmin caste and lower castes are becoming non-vegetarian and vegetarian respectively. The remarkable change which has been noticed, is the disobey of old traditions. Oftenly, ladies took food after elders of the family in the past. This custom is still practised in the high and medium castes of rural areas. Howsoever this is not materialized in the educated and low caste families. It is noteworthy that wife and husband together take food at the same table in the hotels in urban areas, whereas this is rare in rural areas.

Marriage Customs :

Many types of matrimonial, cultural and other socio-economic gives and takes in various religions and caste-groups have been performed in the region. Marriage custom is one of them. Multi form of cultural traditions regarding marriage are present in the study region. For example, the Kshatriya castes always try to marry their

daughters in the west direction today also. It is the only testimony of that cultural tradition which is impelled from the feeling of high and low due to Rajput migration from west to east. But westernisation urbanisation, women education, social dynamism, industrialization etc. are the main factors that have changed the traditional matrimonial customs. Marriageable age is legally increased but childhood marriage is still accustomed in lower and scheduled castes. Old marriage traditions have gone under a lot of changes. Now-a-days dowry system is dominating the process of marriage settlement in higher and middle castes. In olden days, it was the responsibility of the parents or elders to settle the marriage of girls and boys but now most of boys, specially in educated families, desire to have a short interview with the girls to be married with him before the elders and finalise the matter. Court marriages and matrimonial pages of newspapers and magazines also indicate the changes in marriage system.

It may be concluded from above discussion that a number of social and cultural changes have been noticed in the region due to impact of westernisation, sanskritization, urbanisation and industrialization, availability of transport and communication, electricity supply, circulation of newspapers, family planning, use of fertilizers and seeds, irrigational facilities, innovation of agricultural

implements etc. Although the traditional base of social system is present, some relaxations are being noticed in social restrictions, prohibitions, social values and other customs.

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# CHAPTER IX

## CONCLUSIONS AND CULTURAL REGIONS

### A. CONCLUSIONS :

Bundelkhand region of Uttar Pradesh ($24^{\circ}11'$ N - $26^{\circ}27'$N Lat. and $78^{\circ}10'$E - $81^{\circ}34'$ E Long.), covering an area of 29638 $Km^2$ inhabited by 54.38 Lakh persons (1981), consists of four geological formations - (i) Archaean (ii) transitional, (iii) Vindhyan and (iv) Alluvial deposits. Topographically, the study region can be divided into two parts -(i) Upland Bundelkhand in south, (ii) Low land Bundelkhand in north. Mainly the Yamuna river and its tributaries, representing dendritic drainage pattern, flow in the region from South-West to North-east. Sub-humid type of climate is found. May and June are the hottest months and December and January are the coldest months of year. Mostly rainfall is experienced in the month of August (37.95 cms). Forests cover 8.10% area of total geographical area. The abundancy of forest is found in the southern part while in the north these are negligible due to agricultural dominance. The Mahua, Teak, Tendu, Saina, Sej, Dhaw, Dhak are the main plants. The mar, kabar, parua and Rakar soils are found. Among these, the mar soil bears much fertility. The problem of soil erosion is also serious in the region. Though efforts are being made under five year plans to check it, there is a great need of intensive planning as well as cautiousness for preserving the soil fertility.

In prehistoric times, the study area was occupied by the primitive tribes and 'hand-axe culture' was developed. First glimpse of Aryan was noticed in 900 B.C. Since then it had been passed through the hands of many dynasties like Nand, Maurya, Sunga, Kushan, Gupta, Pratihar as well as Chandela till the end of 13th century. Though various socio-economic activities were evolved during purview period, the reign of Chandelas (9th-13th Century A.D.) enjoyed much peace and prosperity. After the downfall of Chandelas, the Muslims as well as Mughal emperors came in power but not fully. They badly affected the socio-economic culture. However the reign of Akbar was much favourable. In the beginning of 17th and 18th centuries, the Bundelas and Marathas rose to power. The Bundelas built many tanks, forts and palaces. With the arrival of Britishers (in the beginning of 19th Century), various public utility services like rail and roadways, schools, hospitals, police stations were provided although they exploited the economy. After Independence under the rule of our national government, multisided development programmes were launched to develop the region for the betterment of the inhabitants.

Human settlement started with the arrival of Aryan. Before this, primitive tribes like Kols, Bhils, Gonds, Sahariyas etc. led unsettled life. Later on, region was colonised by Nandas, Mauryas, Sungas, Kushans, Guptas,

Pratihars, Chandelas, Muslims and Mughals, Bundelas, Kachhwahas, Marathas and Britishers. In ancient and even in medieval periods, location of human settlements were bound with religious and defensive points but political disturbances did not favour the proper evolution of settlements. However they grew and decayed according to prevailing conditions. At present, the settlements are developing in their normal course. The variability of physio-cultural environs resulted in small medium, high and very high size of villages with respective percentages of 46.21, 46.60, 6.49 and 0.70. The spacing of villages ranges from 2 to 2.6 kms. The per village area ranges from 3 to 10 $km^2$ and the population from 582 to 1537 persons. Inverse relationship among spacing, size and density of villages is found. The distribution of rural settlements represent uniform pattern from randomness. The compact rural settlements are mainly confined in the north-west, central as well as eastern parts and the dispersed are oftenly associated with undulating surface. The nomenclature of villages are closely associated with the elements of physio-cultural environment.

As regards urban settlements, religious and natural places acted as nuclei of urban growth in the past. Deogarh, Kalinjar and Chitrakutdham are the examples. The Guptas heralded new epoch in the urban history. After them,

Chandelas developed many towns such as Rohilnagar, Rasaken, Kalinjar, Dudhi, Madanpur, Mahoba etc. The Muslim rulers also developed many towns such as Trich, Maudaha, Rath, Rajapur, Banda, Kalpi, Ranipur, Jhansi, Mauranipur, Chitrakutdham etc. with the arrival of the Brisihers, real urban growth occurred and at present time under five year plans, new towns are being developed. With the changing cultural phenomenon, the number of towns as well as the number of towns in different size-classes has also fluctuated. The number of towns was 29 in 1901 and 1911, 31 in 1921, 29 in 1931, 28 in 1941, 35 in 1951, 20 in 1961, 24 in 1971 and 49 in 1981. The degreepf urbanisation has also been changing. It was 11.01 in 1901, 12.88 in 1941 and 19.88 in 1981.

In the past, region was sparsely populated but under the Chandelas it became prosperous and the population increased. In the Muslims reign, population fluctuated due to wars and rise of feudalism. During the British rule and after Independence, the population expanded by and large. The systematic enumeration of population began in 1901 when it was 21.06 Lakh persons increasing upto 54.38 Lakh persons in 1981. The trend of population change shows that before 1921 it had increased and decreased due to droughts and epidemics but after 1921, it always continued to increase. Uneven distribution of population

is noticed. The northern parts are densely populated in comparision to the southern part. The percentages of rural and urban population are 80.12 and 19.88 respectively. The percentage of working force is 30.73 out of which 88.02% are males and 11.98% females workers. The most of workers (78.24%) are engaged in agricultural activities while 3.59 percent are in industrial sector and the remaining in other activities. The discussion of age-structure shows the high proportion of young population which is the result of high birth rate. The study area is Hindu (83.76%) dominated due to rulers of Hindu kings from the past. Muslims share 6.2 percent only. The percentage of literates to total population is 28.69. The percentages of male literates to total males and female literates to total females are 41.52 and 17.31 respectively. Population estimation shows continuously increasing trend upto 75.75 Lakh persons in 2001. The continuous increasing population may create several problems. Therefore, there is a great need of social awakening as well as industrial and agri-cultural developments.

The categories of land-uses : Net area sown, land not available for agriculture, cultivable waste, fallow land, forest and uncultivable land occupy 62.03, 10.28, 9.98, 8.92, 8.10 and 1.69 percent of total area respectively. The history of irrigation started from the Chandela period

but the quantum of irrigated land is still small as 21.34% of total net sown area is irrigated. Canals, wells and tanks are the main sources of irrigation which cover 75.73, 23.96 and 0.40 percent of total irrigated area. The north-west and north-east portions of the area are irrigated by canals and tube-wells whereas the southern is irrigated by tanks and wells. Rabi, Kharif and Zaid crops occupy 66.19, 33.50 and 0.31% of total cropped area. The major crops are wheat, paddy, Bajra, Barley, Gram, pulses etc. High diversification of crops is found in upland whereas low diversification in low land Bundelkhand. The total number of crop combination regions comprising of three to six crops are 18 out of which 9,5,2 and 2 fall in three, four, five and six crop combinations. The disdussion represents that agriculture is generally traditional and rudimentary. Dry farming is significant feature, size of holding is small and system of double crop is slowly dawning.

The study of crop productivity vis-a-vis population is made to understand the level of population nourishment as well as living condition of the people in the region. High productivity is found in Konch, Jalaun, Kalpi, Orai, Rath and Maudaha tahsils due to plain surface, adequate supply of water as well as mar and kabar soils. Medium crop productivity is noted in Mahoba, Baberu, Charkhari, Karwi, Jhansi, Banda, Moth, Hamirpur, Mauranipur and

Lalitpur tahsils and in the remaining tahsils low productivity is found. Excluding six tahsils : Mauranipur, Jhansi, Talbehat, Banda, Karwi and Mau, all the remaining tahsils of the region experience surplus of calories when compared with the standard of 2000 calories per head per day. Discussion, thus, highlights, that about 3/4 percent population of the region is passing through under-nutrition and mal-nutrition. The personal observations unfold that poor families have larger expenditure on food, particularly on cereals and pulses than another nutritious diet. Even rich families seldom think to improve their diet through milk and milk products. Mostly common diet of people is constituted of rice, chapati, pulses and often vegetables. Mostly Muslims and scheduled caste people are non-vegetarian but their budget seldom permits them to purchase meat, fish, or eggs.

Social structure is an organisation of human groups and institutions. Changes in society occur due to geographical, economic psychological, political and cultural factors. Varna and Jajmani system, Purusharth, Joint family, Satya, Ahimsa, Kindness, forgiveness etc. are the traditional social values. Caste system, Jajmani system, family structure and occupational structure as prevailed in the region reveal the traditionalism in the social set-up. The empirical study of 2426 families of twenty sampled villages highlights

that Chamar, Kurmi, Kshatriya, Brahmin, Kachhi, Potter, Ahir and Gupta families share 14.34, 12.08, 12.04, 9.52, 8.86, 4.16, 3.59 and 3.50 percent of total population respectively and the remaining castes are in negligible proportion. Kshatriya, Kurmi, Brahmin and Kachhi are economically the dominating families which occupy 25.20, 23.62, 13.98 and 7.23 percent of cultivated land respectively. The percentages of families in high, medium and low income groups are noted as 57.50, 29.43, and 13.07 respectively. The percentage of literacy is 29.43 which is found mostly in Kayastha, KShatriya, Brahmin, and Gupta castes due to well economic condition. The most of families are engaged in agriculture (74.64%), while 33.42% are in labouring, 26.64% in traditional occupation, 8.65% in services and 3.83% in other activities. The percentages of nuclear and joint families are 75.23 and 24.77 respectively. The high percentage of nuclear families is found in Chamar, Dhobi, Kori, Khatik, Kachhi, Potter, Ahir etc., whereas it is low in Kurmi, Kshatriya, Brahmin and Kayastha families.

The feeling of caste is increasing day by day. Abatements, however, in traditional practices like drinking, fooding, and other behaviourial activities have been noticed. Providing food on their pots to low caste people, sitting on the same cot may be cited as examples. Jajmani system and inter-caste relations are being disintegrated and occupational

mobility among castes has also been noticed. The feeling of individuality weakened the family structure by which the percentage of nuclear families increased from 68.94 to 75.23 in the last twenty years whereas the percentage of joint families decreased from 31.06 to 24.77. The caste and village Panchayats are losing their importance. They have significance for low and backward castes only. The conclusions drawn from the study of villages reveal that though traditional social values are present today also, modernisation, new development programmes, educational progress, increasing income sources etc. have brought out changes in social structure. But the rate of change is very slow due to mass illiteracy, mass poverty and traditionalism.

Culture is an aggregation of all the practices and behaviours of man. Due to new technology and new innovations some changes in culture occurred from time to time. These are exhibited in two forms (i) Material (agricultural mechanisation, electrification, water management, industrialization, transportation etc.), (ii) non-material (Beliefs, ideals, customs, traditions, religion etc). Though agriculture is performed in traditional ways today also, people are forwarding towards mechanised agriculture by using winnowing fans thrashers, iron ploughs etc. with the impetus of rural electrification as 32.07 percent

villages have been electrified in the region. The development of various arts and crafts were noticed in the region from the reign of Mauryas, Guptas, Gujar Pratihars and Chandelas. With the change of supermacy in the hands of Britishers the traditional arts and crafts began to decline and various types of items like woolen carpets, weapons, implements, utensils, coarse blankets, idols, embroidered silk etc. were produced. Since Independence, new industries are being established. As regards transport, land as well as water routes both were developed in the past. With the arrival of the Britishers, metalled and unmetalled roads were constructed. The suggestion of the Indian Road Development Committee (1927), Transport Advisory Committee (1934) and Nagpur Plan (1943) laid emphasis on transport to develop. At present, there are two national highways Nos.25 and 26, four state highways 13, 17, 21 and 44 and other local roads which serve the region. The length of metalled roads per 1000 $Km^2$ and per Lakh population is 139.19 Kms and 75.55 Kms respectively. The length of railways is 735 Kms. The accessibility by roads and railways is 86.84% and 29.23% respectively. As a means of communication, Post and Telegraph were firstly developed in 1885 in Jhansi city. In 1907, there were only 147 postal branches which increased to 970 in 1983 with 1126 sub-offices. The postal services are available in most of large villages whereas telegraphic services are in service centres and towns. Apart from it, transistor, newspaper and television are also plying their role as means of communication. Besides

these changes in material elements, changes in non-material elements like fashion, habits of drinking and fooding, marriages etc. have been also observed. It can be, thus, safely said that technology and new innovations have brought out so many cultural changes in the region. But the varying environment has created spatial disparities in cultural development of the region.

B. CULTURAL REGIONS :

The delimitation of cultural regions involves the regionalisation of the region into sub-regions on the basis of cultural activities. The need of regionalisation arises from spatial diversities which result from varied types of factors like resource endowment, socio-economic structure, infra-structure and politics. In Indian context, regional diversities are deep rooted. The Britishers favoured some specific locations and developed them accordingly. After Independence at the beginning of planning period, locations of development have not been scientifically considered, to a great extent due to political interference. All these factors led the country to the marked diversities in socio-economic development. In the present days of balanced regional development, efforts are being made to minimise and remove the spatial diversities. The regionalisation of a region, therefore, carries much importance for planning purpose.

Methodology of Regionalisation : A Brief Review :

The history of regionalisation Studies in India is

very recent. The early regional studies were mostly based on physical factors. The social and economic factors attracted little attention before fifties. The food problem during fifties invited the delimitation of agricultural regions. Hanseng presented the Agricultural regions of India[1]. Sen Gupta and Sdasyuk while discussing economic regions of India, laid much stress on the elements of agricultural regionalisation[2]. During sixties, regional studies based on resources appeared in geographic literature. The works of Learmonth and Bhat[3], Learmonth[4] and Prakash Rao and Bhat[5] are the examples. More recently, Sharma presented a voluminous work on agricultural regionalisation[6]. In 1962, planning commission emphasised the regionalisation based on a number of socio-economic indicators. In 1964, planning commission published an important work on resource development regions[7]. However scientific methodology of regionalisation was marginal in these studies[8]. In 1961, Mitra determined socio-economic levels of the districts and divided the country into seven major regions, twenty four small regions and sixty four micro regions[9]. Nath[10], Pal[11], Singh[12], Lahiri and Kundu[13], Mukherjee[14] followed the same lines in their regional schemes. Presently, the studies, dealing with regionalisation at various territorial levels, are based on several socio-economic and demographic indicators with the application of elaborate statistical methods. The studies made by Sundaram[15], Sharma and Katiyar[16],

Suar[17], Parmar[18], Pathak et.al.[19] etc. may be cited as examples.

Method Used in the Study :

Regionalisation must be based on such indicators that may serve the purpose in hand. The purpose of this exercise is to divide the study region into sub-regions of homogeneous cultural development. Hence the following 22 indicators depicting the present regional structure have been selected :-

1. Net area sown as percent of total area.
2. Area sown more than once as percent of net area sown.
3. Percent of irrigated land to net area sown.
4. Consumption of chemical fertilizers per hectare of net sown area.
5. Number of tractors per 100 hectares of net sown area.
6. Population Density.
7. Percentage of workers to total population.
8. Percentage of Industrial workers to total workers.
9. Percentage of other workers to total workers.
10. Percentage of female workers to total workers.
11. Percentage of literatures to total populations.
12. Percentage of male literates to total males.
13. Percentage of female literates to total females.
14. Availability of calories per head per day.

15. Road length per 100 $Km^2$.

16. Road length per 1000,00 population.

17. Road accessibility : percentage of accessible area to total area.

18. Post offices per 100 $Km^2$.

19. Post offices per 1000,00 population.

20. Percentage of electrified villages to total villages.

21. Degree of urbanization.

22. Number of Industrial units per 1000,00 population.

It is to be noted here that the above list is not exhaustive one. However it will serve our purpose.

The next step is to construct the indices of the units so that each unit can be compared with others and the disparities may be measured. For this purpose actual values of the indicators of each unit have been divided by their respective means and the results have been added horizontally to construct the composite index (Appendix VI).

Thus if $\bar{x}a$, $\bar{x}b$, $\bar{x}c$ ------ $\bar{x}n$ are the arithmetic means for xa, xb, xc - - xn indicators (n=22), the composite index for a unit (xi) is calculated as follows :

$$xi = \frac{xa}{\bar{x}a} + \frac{xb}{\bar{x}b} + \frac{xc}{\bar{x}c} = \text{---------} \frac{xn}{\bar{x}n}$$

The composite index has been calculated for all the tahsils (table 9.1).

Table 9.1: Composite indices of Cultural Development.

| Tahsils | Composite Indices |
|---|---|
| 1. Jhansi | 32.54 |
| 2. Orai | 29.49 |
| 3. Konch | 26.06 |
| 4. Jalaun | 25.34 |
| 5. Banda | 24.31 |
| 6. Naraini | 23.81 |
| 7. Kalpi | 23.41 |
| 8. Mauranipur | 22.82 |
| 9. Rath | 22.45 |
| 10. Moth | 22.06 |
| 11. Hamirpur | 21.06 |
| 12. Lalitpur | 21.96 |
| 13 Mahoba | 21.52 |
| 14. Talbehat | 21.23 |
| 15. Charkhari | 20.89 |
| 16. Baberu | 19.80 |
| 17. Garautha | 19.76 |
| 18. Maudaha | 19.75 |
| 19. Mau | 18.36 |
| 20. Karwi | 17.69 |
| 21. Kulpahar | 16.05 |
| 22. Mahrauni | 15.52 |

The tahsils of the region are arranged according to descending order of composite indices and on the basis of natural breaks in the array, the study region has been divided into five sub-regions (Table 9.2) and Fig. (9.1A & 9.1B).

Table 9.2 : Levels of Cultural Development

| Levels | No. of Tahsils | Name of Tahsils |
|---|---|---|
| Very high | 1 | Jhansi |
| High | 1 | Orai |
| Medium | 2 | Konch and Jalaun |
| Low | 10 | Banda, Naraini, Kalpi, Mauranipur, Rath, Moth, Hamirpur, Lalitpur, Mahoba and Talbehat. |
| Very Low | 8 | Charkhari, Baberu, Garautha, Maudaha, Mau, Karwi, Kulpahar and Mahrauni |

I & II. Area of Very High and High Development :

Situated in the extreme western part of the region

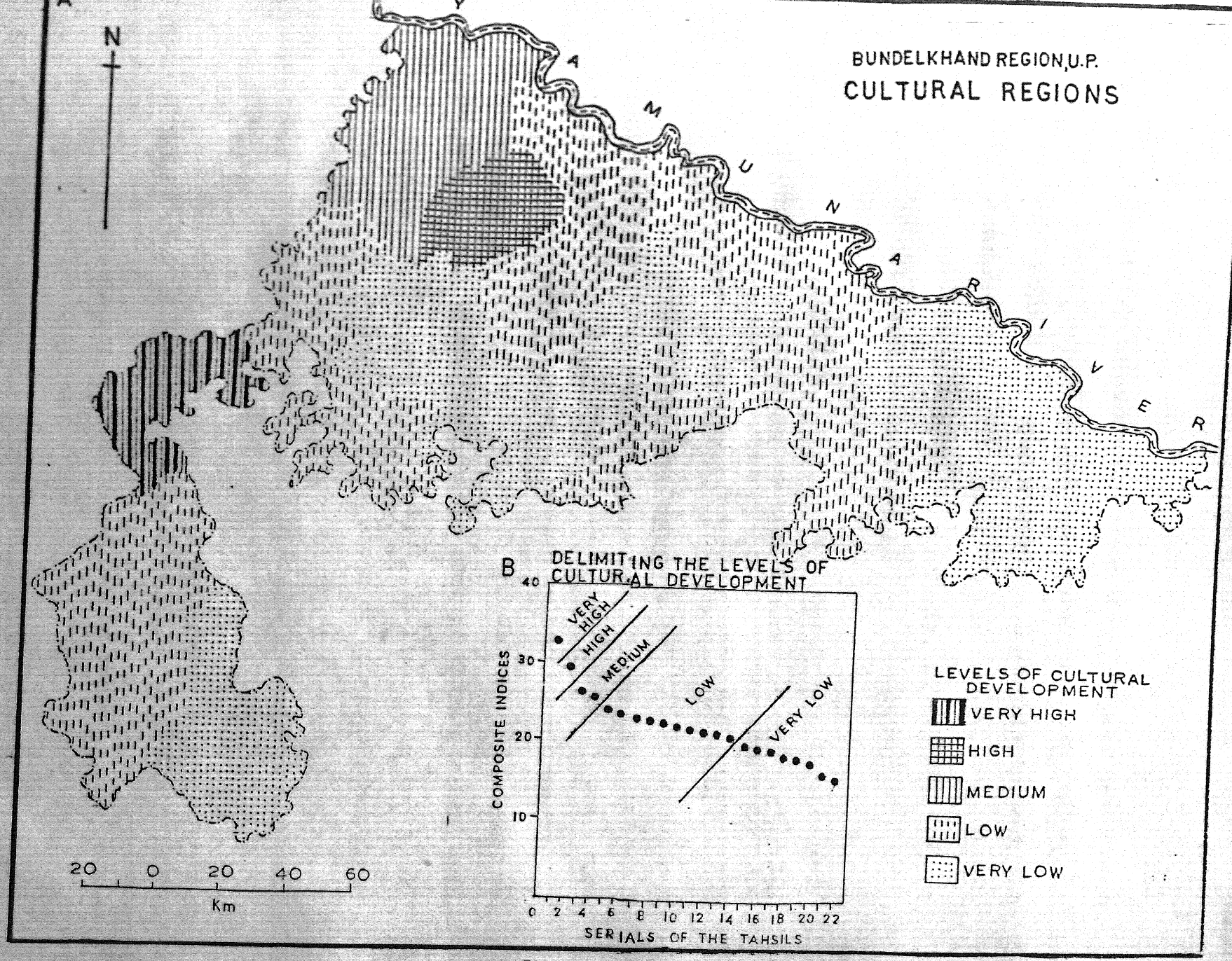
BUNDELKHAND REGION, U.P.
CULTURAL REGIONS
N
YAMUNA RIVER
B
DELIMITING THE LEVELS OF CULTURAL DEVELOPMENT
VERY HIGH
HIGH
MEDIUM
LOW
VERY LOW
COMPOSITE INDICES
40
30
20
10
0 2 4 6 8 10 12 14 16 18 20 22
SERIALS OF THE TAHSILS
LEVELS OF CULTURAL DEVELOPMENT
VERY HIGH
HIGH
MEDIUM
LOW
VERY LOW
20 0 20 40 60
Km

FIG. 9.1

in Jhansi tahsil is area of very high cultural development. Although the tahsil is agriculturally backward, Urban agglomeration has played a great part in bringing out the state of very high development in the tahsil. The figures of the indicators - 3, 4, 6, 8, 9, 11, 12, 13, 15, 17, 21, and 22 are above regional mean.

Orai tahsil, in the central north-west is the area of high development due to high figures of the indicators- 1, 4, 5, 6, 9, 11, 12, to 16, 20, 21 and 22.

III. Areas of Medium Development :

Adjoining the area of high development in the extreme north-west is the area of medium cultural development comprising the tahsils of Kinch and Jalaun. Although the average scores obtained by the area of this category with respect to the indicators - 1, 4, 5, 14, 17, 18 and 19 are higher than those of the areas of categories mentioned above, the low average scores of the indicators - 8, 9, to 13, 15, 21 and 22 have caused medium level of development in these areas.

IV. Areas of Low Development :

These areas are scattered in the region. The tahsils of Banda, Naraini, Kalpi, Mauranipur, Rath, Moth, Hamirpur, Lalitpur, Mahoba and Talbehat fall under this category.

No exact generalisation can be made about the cause of low development in these areas. However the cause for low development can be ascribed to the indicators - 4, 5, 6, 9, 10, 11, 13 and 21. The average score obtained by this category with respect to the above indicators is quite low.

V. Areas of Very Low Development :

The tahsils of Karwi, Mau and Baberu in the north-east, Maudaha, Charkhari, Kulpahar, and Garautha in central and South-central land mahrauni in extreme south-west part of the region fall under this category. A number of factors are responsible for very low development in these area. The average scores obtained by the areas of this category with respect to the indicators 2,3 to 6, 8, 9, 12, 13, 15, 17, 18, 20, 21 and 22 are very low due to which the state of very low development is noticed in these areas.

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## APPENDIX I

## LIST OF SAMPLED VILLAGES

| Sl.No. | Name of villages | Location code number | Tahsils |
|---|---|---|---|
| 1. | Bachhaundha | 120 | Baberu |
| 2. | Ballan | 110 | Baberu |
| 3. | Bamhaura | 41 | Kalpi |
| 4. | Budhia | 57 | Jhansi |
| 5. | Chak.Atuhi | 58 | Hanirpur |
| 6. | Chandpura | 150 | Mahoba |
| 7. | Chhayan | 168 | Mahrauni |
| 8. | Kalwara Khurd | 31 | Karwi |
| 9. | Karaundi | 111 | Rath |
| 10. | Khandaini | 30 | Garautha |
| 11. | Kuthondh | 274 | Jalaun |
| 12. | Mirchwara | 239 | Lalitpur |
| 13. | Padri | 291 | Konch |
| 14. | Paoori | 98 | Mau |
| 15. | Purakalan | 212 | Garautha |
| 16. | Rehuntia | 177 | Karwi |
| 17. | Reruwa | 30 | Mau |
| 18. | Sultanpura | 61 | Jalaun |
| 19. | Tarhati Kalinjar | 78 | Naraini |
| 20. | Upri | 91 | Maudaha |

APPENDIX II

## प्रश्नावली- प्रपत्र

---------- ग्राम की विद्यमान सामाजिक-आर्थिक-अधिवासीय संरचना तथा उनमें हुए परिवर्तनों का सर्वेक्षण

प्रस्तुत साक्षात्कार का उद्देश्य ग्रामीण जीवन के सामाजिक संरचना के प्रमुख तथ्यों में आये हुए परिवर्तनों की जानकारी प्राप्त करना है । इसका उपयोग शैक्षणिक कार्यों के लिये किया जायगा । साथ ही आपकी बातों को गुप्त रखा जावेगा ।

1- मुखिया का नाम श्री---------- जाति एवं धर्म ---------- आयु ---------- वर्ष ।

2- परिवार में कमाने वाले सदस्यों की संख्या ------ आश्रतों की संख्या- ---------

3- जनसंख्या :-

| काल-खण्ड | कुल जनसंख्या | | | साक्षर | | निरक्षर | |
|---|---|---|---|---|---|---|---|
| | स्त्री | पुरुष | योग | स्त्री | पुरुष | स्त्री | पुरुष |
| वर्तमान | | | | | | | |
| 20 वर्ष पूर्व | | | | | | | |

4- आय वार्षिक (रूपये में) :-

| काल-खण्ड | कृषि | नौकरी | व्यवसाय | पशुपालन | अन्य | आय का स्तर |
|---|---|---|---|---|---|---|
| वर्तमान | | | | | | |
| 20 वर्ष पूर्व | | | | | | |

5- शिक्षा ( व्यक्तियों की संख्या ) :-

| काल-खण्ड | प्राइमरी | हाई स्कूल | इण्टरमीडिएट | स्नातक | परा स्नातक | तकनीकी | अन्य |
|---|---|---|---|---|---|---|---|
| वर्तमान | | | | | | | |
| 20 वर्ष पूर्व | | | | | | | |

6- व्यवसाय ( व्यक्तियों की संख्या ) :-

| काल-खण्ड | पारम्परिक | कृषि | मजदूरी | नौकरी | उद्योग व्यवसाय | वकालत व्यवसाय |
|---|---|---|---|---|---|---|
| वर्तमान | | | | | | |
| 20 वर्ष पूर्व | | | | | | |

7- पारिवारिक संगठन :-

| काल-खण्ड | एकाकी | बहुसूत्रीय |
|---|---|---|
| वर्तमान | | |
| 20 वर्ष पूर्व | | |

8- भू-स्वामित्व (एकड़ में) :-

| विवरण | वर्तमान | 20 वर्ष पूर्व |
|---|---|---|
| अपनी | | |
| दूसरों की | | |
| नई आवंटित भूमि | | |

9- विभिन्न फसलों का क्षेत्रफल (एकड़ में) :-

| काल- खण्ड | धान | मक्का | गेहूं | चना | मटर | गन्ना | मूंगफली | आलू | तिलहन | अन्य |
|---|---|---|---|---|---|---|---|---|---|---|
| वर्तमान | | | | | | | | | | |
| 20 वर्ष पूर्व | | | | | | | | | | |

10- अधिवास :-

| काल-खण्ड | झोपड़ी फूस | कच्चा फूस | कच्चा खपरैल | पक्का खपरैल | पक्का |
|---|---|---|---|---|---|
| वर्तमान | | | | | |
| 20 वर्ष पूर्व | | | | | |

11- सिंचित क्षेत्रफल (एकड़ में) :-

| काल-खण्ड | तालाब | नदी | कुंआ | रहट | ट्यूबवेल | नहर | अन्य |
|---|---|---|---|---|---|---|---|
| वर्तमान | | | | | | | |
| 20 वर्ष पूर्व | | | | | | | |

12- अन्य कृषि उपकरण :-

| स्थिति | लोहे का हल | पम्पिंग सेट | चारा मशीन | ट्रेक्टर | थ्रेशर | गोबर गैस | ऊनलप | बैलगाड़ी |
|---|---|---|---|---|---|---|---|---|
| है | | | | | | | | |
| नहीं है | | | | | | | | |
| क्रय-वर्ष | | | | | | | | |

13- अन्य सुख-सुविधायें (साधनों की संख्या) :-

| काल-खण्ड | रेडियो | टेपरिकार्ड | घड़ी | सायकिल | आटो सायकिल | मोटर गाड़ी | समाचार पत्र |
|---|---|---|---|---|---|---|---|
| वर्तमान | | | | | | | |
| 20 वर्ष पूर्व | | | | | | | |

14- क्या आप परम्परागत व्यवसाय में हैं हां/नहीं

यदि हां तो क्या (1) आपके परिवार का भरण-पोषण हां/नहीं
हो जाता है

(2) आप इसको छोड़ना चाहते हैं । हां/नहीं

यदि हां तो क्यों--

(1) अल्प आयवश/सामाजिक प्रतिष्ठा
वश/उच्च शिक्षा वश/बाहर
नौकरी का सुअवसर

15- शिक्षा के प्रति आपका विचार कैसा है । पक्ष में/विपक्ष में

(1) यदि विपक्ष में तो क्या ? अर्थ विवशतावश/
रूढ़िवादितवश/ अन्य

16- क्या आप सामाजिक परम्परावश हुई जाति विभाजन
व्यवस्था से सहमत हैं/असहमत हैं/यदि असहमत हैं तो क्यों ?

(1) किसी भी जाति के यहां भोजन कर सकते हैं ? हां/नहीं

(2) किसी भी जाति में विवाह कर सकते हैं ? हां/नहीं

(3) समान आसन पर बैठ एवं सो सकते हैं ? हां/नहीं

(4) होटल में किसी रसोइया या परसने वाले की बिना
पूछताछ के भोजन कर सकते हैं ? हां/नहीं

17- परिवार नियोजन के बारे में आप का विचार कैसा है ?
यदि विपक्ष में है क्या-रूढ़िवादितावश/अशिक्षावश/अन्य

18- विवाह की अवांछित दिशायें - लड़कों की------- लड़कियों की-------

19- विवाह की अधिकतम दूरी (कि॰मी॰)

20- विवाह की वांछित आयु - लड़की की-------- लड़का का ----------

21- यदि समाज में सबको मिलाकर समान कर दिया जाय तो समाज का विकास होगा/विनाश होगा/कुछ नहीं ?

22- पूर्व स्थापित सामाजिक मान्यतायें समाज के विकास में - बाधक है/साधक हैं/कुछ नहीं हैं ।

23- आप को क्षेत्रीय अधिकारियों से कैसी सहायता मिलती हैं ? पूर्णरूप से/सामान्य से/शोषण

24- क्या आपके गांव में निम्नलिखित सुविधायें उपलब्ध हैं - (1) विद्यालय, (2) अस्पताल, (3) विद्युत (4) पोस्ट आफिस (5) पंचायत-घर (6) पीने का पानी (7) उपभोक्ता साधन सहकारी समिति की दुकान ।

25- क्या आप गांव से शहर में बसना चाहते हैं ? यदि हां तो क्या- रोजगारवश/नौकरीवश/अन्य कारणवश

26- आपके पास कुल पशुओं में कृषि तथा दुधारू पशुओं की संख्या (1) कृषि में प्रयुक्त (2) दुधारू

27- आप अपना कार्य मजदूरों से करवाते हैं/स्वंय करते हैं

28- कृषि में प्रयुक्त उर्वरकों से प्रगति हुई ? हां/नहीं

29- प्रमाणित बाजों की अपेक्षा कैसे बीज पैदावार में बाधक हैं ? हां/नहीं

30- वर्तमान समाज को आप क्या कहोगें - प्रगत्योन्मुख/विनाशोन्मुख

## APPENDIX III

## PER VILLAGE AREA $Km^2$

| Tahsils | Total area $km^2$ | Total Number of villages | Per village area $km^2$ |
|---|---|---|---|
| Moth | 1218.1 | 268 | 4.54 |
| Garautha | 1599.1 | 233 | 6.86 |
| Mauranipur | 100.1 | 175 | 6.28 |
| Jhansi | 1200.2 | 179 | 6.71 |
| Talbehat | 1350 | 196 | 6.88 |
| Lalitpur | 2019 | 308 | 6.55 |
| Mahrauni | 1415 | 250 | 5.66 |
| Hamirpur | 1046 | 194 | 5.39 |
| Rath | 1601 | 259 | 6.18 |
| Kulpahar | 1058 | 265 | 3.99 |
| Charkhari | 907 | 120 | 7.56 |
| Maudaha | 1546 | 205 | 7.54 |
| Mahoba | 904 | 115 | 7.86 |
| Jalaun | 1343.4 | 439 | 3.03 |
| Konch | 1057.2 | 314 | 3.55 |
| Orai | 983.5 | 156 | 6.26 |
| Kalpi | 1275.8 | 241 | 5.27 |
| Banda | 1645.4 | 211 | 7.79 |
| Baberu | 1590.3 | 218 | 7.29 |
| Naraini | 1396.3 | 292 | 4.78 |
| Karwi | 2347.8 | 394 | 5.96 |
| Mau | 1036.0 | 184 | 5.63 |
| Region | 29638.20 | 5216 | 5.87 |

## APPENDIX IV

## PER VILLAGE POPULATION

| Tahsils | Total Rural Population | Total villages | Per village Population |
|---|---|---|---|
| Moth | 181878 | 268 | 678.64 |
| Garautha | 183004 | 233 | 785.42 |
| Mauranipur | 181342 | 175 | 1036.24 |
| Jhansi | 159759 | 179 | 892.51 |
| Talbehat | 148244 | 196 | 756.35 |
| Lalitpur | 174511 | 308 | 566.59 |
| Mahrauni | 186880 | 250 | 747.52 |
| Hamirpur | 164615 | 194 | 848.53 |
| Rath | 224632 | 259 | 867.30 |
| Kulpahar | 185853 | 265 | 701.33 |
| Charkhari | 75047 | 120 | 625.39 |
| Maudaha | 227889 | 205 | 1111.65 |
| Mahoba | 117781 | 115 | 1024.18 |
| Jalaun | 300215 | 439 | 688.86 |
| Konch | 183009 | 314 | 582.83 |
| Orai | 124329 | 156 | 796.98 |
| Kalpi | 183442 | 241 | 761.17 |
| Banda | 287843 | 211 | 1384.18 |
| Baberu | 334999 | 218 | 1536.69 |
| Naraini | 291594 | 292 | 998.61 |
| Karwi | 305653 | 394 | 775.77 |
| Mau | 134269 | 184 | 729.72 |
| Region | 4356788 | 5216 | 836.40 |

## APPENDIX V

## DECADAL GROWTH OF POPULATION (1901-81)

| Years | Total Population in Lakh | |
|---|---|---|
| | Region | State |
| 1901 | 21.06 | 486 |
| 1911 | 22.07 | 482 |
| 1921 | 20.87 | 467 |
| 1931 | 24.04 | 498 |
| 1941 | 27.36 | 565 |
| 1951 | 28.88 | 632 |
| 1961 | 34.98 | 737 |
| 1971 | 42.90 | 883 |
| 1981 | 54.38 | 1109 |

## APPENDIX VI

## INDICES OF THE DEVELOPMENT INDICATORS

| Tehsils | Serials of Indicators | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Moth | 1.20 | 0.85 | 1.62 | 1.54 | 1.23 | 0.93 | 0.92 | 0.59 | 0.76 | 0.55 | 1.18 | 1.21 |
| Garautha | 1.09 | 1.42 | 0.76 | 0.85 | 0.62 | 0.68 | 0.95 | 1.07 | 0.63 | 0.65 | 1.09 | 1.13 |
| Mauranipur | 1.09 | 0.87 | 1.21 | 1.22 | 0.23 | 1.10 | 0.94 | 2.56 | 0.94 | 0.75 | 1.02 | 1.03 |
| Jhansi | 0.51 | 2.36 | 2.85 | 2.87 | 0.15 | 1.64 | 0.91 | 1.88 | 3.35 | 0.85 | 1.53 | 1.34 |
| Talbehat | 0.45 | 2.94 | 2.55 | 1.45 | 0.20 | 0.60 | 1.10 | 0.87 | 0.89 | 0.54 | 0.62 | 0.64 |
| Lalitpur | 0.58 | 2.39 | 0.97 | 0.73 | 0.43 | 0.61 | 1.04 | 1.43 | 1.37 | 0.77 | 0.88 | 0.86 |
| Mahrauni | 0.71 | 1.06 | 0.76 | 0.37 | 0.48 | 0.71 | 1.02 | 0.60 | 0.47 | 0.38 | 0.62 | 0.66 |
| Hamirpur | 1.20 | 0.29 | 0.54 | 0.40 | 0.54 | 1.03 | 0.94 | 1.00 | 1.16 | 0.73 | 1.02 | 1.01 |
| Rath | 1.13 | 0.24 | 1.39 | 0.46 | 1.43 | 0.88 | 1.08 | 1.32 | 0.66 | 1.38 | 0.92 | 1.97 |
| Kulpahar | 0.98 | 0.45 | 0.87 | 0.42 | 0.82 | 0.97 | 1.07 | 1.06 | 0.48 | 1.08 | 0.77 | 0.82 |
| Charkhari | 1.11 | 0.45 | 0.56 | 0.14 | 0.46 | 0.60 | 1.05 | 1.36 | 0.88 | 1.14 | 0.90 | 0.92 |
| Maudaha | 1.29 | 0.17 | 0.29 | 0.28 | 0.85 | 0.84 | 0.98 | 0.66 | 0.70 | 0.77 | 0.94 | 0.97 |
| Mahoba | 1.03 | 0.24 | 0.46 | 0.19 | 0.69 | 0.96 | 1.09 | 1.12 | 1.09 | 1.30 | 0.92 | 0.90 |
| Jalaun | 1.26 | 0.70 | 1.47 | 3.22 | 1.41 | 1.35 | 0.92 | 0.58 | 0.76 | 0.33 | 1.26 | 1.22 |

Appendix VI contd.

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Konch | 1.32 | 0.52 | 1.12 | 1.67 | 4.02 | 1.10 | 0.93 | 0.74 | 1.00 | 0.37 | 1.30 | 1.27 |
| Orai | 1.20 | 0.15 | 0.70 | 1.50 | 4.00 | 1.04 | 0.93 | 0.67 | 1.70 | 0.79 | 1.48 | 1.36 |
| Kalpi | 1.19 | 0.29 | 0.98 | 1.69 | 1.79 | 0.89 | 1.01 | 0.65 | 0.89 | 0.92 | 0.97 | 0.98 |
| Banda | 1.22 | 0.44 | 0.38 | 0.59 | 0.54 | 1.16 | 0.99 | 2.18 | 1.08 | 1.08 | 1.04 | 1.02 |
| Baberu | 1.29 | 2.02 | 1.41 | 0.58 | 0.28 | 1.17 | 1.09 | 0.67 | 0.28 | 1.38 | 0.70 | 0.79 |
| Naraini | 1.14 | 3.72 | 1.80 | 1.18 | 0.59 | 1.21 | 1.12 | 0.80 | 0.52 | 1.42 | 0.77 | 0.83 |
| Karwi | 0.65 | 0.92 | 0.52 | 0.72 | 0.33 | 0.76 | 1.18 | 0.58 | 0.68 | 1.67 | 0.73 | 0.79 |
| Mau | 0.96 | 0.95 | 0.28 | 1.19 | 0.36 | 0.73 | 1.33 | 0.45 | 0.56 | 2.27 | 0.71 | 0.80 |

| Tahsils | Serials of Indicators | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | Composite Indices |
| Môth | 0.85 | 1.11 | 1.08 | 1.11 | 1.03 | 0.98 | 1.01 | 0.68 | 0.81 | 0.82 | 22.06 |
| Garautha | 0.78 | 1.10 | 0.99 | 1.37 | 0.87 | 0.78 | 1.09 | 0.66 | 0.63 | 0.54 | 19.75 |
| Mauranipur | 0.80 | 0.80 | 1.37 | 1.18 | 0.86 | 1.14 | 0.99 | 0.95 | 1.09 | 0.68 | 22.82 |
| Jhansi | 1.77 | 0.23 | 1.28 | 9.59 | 1.09 | 0.99 | 0.46 | 0.72 | 3.33 | 1.84 | 32.54 |
| Talbehat | 0.41 | 0.85 | 0.82 | 1.30 | 1.06 | 0.82 | 1.30 | 0.57 | 0.38 | 0.53 | 20.89 |
| Lalitpur | 0.75 | 0.89 | 0.89 | 1.38 | 0.95 | 0.65 | 1.01 | 0.70 | 1.34 | 0.90 | 21.52 |
| Mahrauni | 0.39 | 0.96 | 0.78 | 1.04 | 1.03 | 1.01 | 1.35 | 0.52 | 0.17 | 0.43 | 15.52 |
| Hamirpur | 0.84 | 1.01 | 1.14 | 1.05 | 1.08 | 1.14 | 1.05 | 2.17 | 1.04 | 1.58 | 21.96 |
| Rath | 0.59 | 1.29 | 0.87 | 0.94 | 1.06 | 0.84 | 0.91 | 0.69 | 0.83 | 0.57 | 22.45 |
| Kulpahar | 0.47 | 0.88 | 0.59 | 0.58 | 0.67 | 0.93 | 0.92 | 0.51 | 0.29 | 0.42 | 16.05 |
| Charkhari | 0.67 | 1.06 | 0.61 | 0.96 | 1.14 | 0.64 | 1.02 | 0.35 | 1.41 | 1.57 | 19.80 |
| Maudaha | 0.67 | 1.37 | 1.12 | 1.26 | 1.10 | 1.09 | 1.24 | 0.94 | 0.44 | 0.39 | 18.36 |
| Mahiba | 0.77 | 1.03 | 0.99 | 0.98 | 1.02 | 1.00 | 1.00 | 0.96 | 1.46 | 2.03 | 21.23 |
| Jalaun | 1.09 | 1.09 | 1.20 | 0.84 | 1.05 | 1.86 | 1.32 | 1.16 | 0.69 | 0.56 | 25.34 |

Appendix VI contd.

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Konch | 1.11 | 1.47 | 1.17 | 1.01 | 1.12 | 1.54 | 1.34 | 0.94 | 0.65 | 0.35 | 26.06 |
| Orai | 1.48 | 1.13 | 1.50 | 1.28 | 0.95 | 0.98 | 0.89 | 1.73 | 1.85 | 2.18 | 29.49 |
| Kalpi | 0.72 | 1.51 | 1.09 | 1.15 | 1.12 | 1.06 | 1.12 | 1.90 | 0.82 | 0.67 | 23.41 |
| Banda | 0.85 | 0.85 | 1.31 | 1.07 | 1.10 | 1.49 | 1.22 | 2.24 | 1.09 | 1.37 | 24.31 |
| Baberu | 0.29 | 1.07 | 0.86 | 0.70 | 1.12 | 1.21 | 0.99 | 0.93 | 0.30 | 0.63 | 19.76 |
| Naraini | 0.47 | 0.96 | 1.03 | 0.80 | 1.12 | 0.96 | 0.76 | 0.92 | 0.52 | 1.17 | 23.81 |
| Karwi | 0.39 | 0.87 | 0.84 | 1.05 | 0.64 | 0.53 | 0.67 | 1.24 | 0655 | 1.38 | 17.69 |
| Mau | 0.36 | 0.86 | 0.90 | 1.17 | 0.67 | 0.76 | 1.00 | 0.52 | 0.36 | 1.05 | 18.24 |